

REPORT
ON THE
HEALTH OF THE BOROUGH
OF
BIRMINGHAM,
FOR THE YEAR 1879,

ALSO,

ON THE PROCEEDINGS TAKEN UNDER THE ACT FOR THE

PREVENTION OF ADULTERATION
OF ARTICLES OF FOOD AND DRINK,

BY
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MEDICAL OFFICER OF HEALTH'S DEPARTMENT,

COUNCIL HOUSE, BIRMINGHAM,

April 30th, 1880.

TO THE HEALTH COMMITTEE.

MR. CHAIRMAN AND GENTLEMEN,

I have the honour to present my Report on the Health of the Borough for the year 1879, which, for Registration purposes, consisted of fifty-three weeks, and ended on the 3rd of January, 1880.

The population of the Borough as estimated by the Registrar-General to the middle of the year, upon the basis of the 1871 census, is 388,884, spread over an area of 8,400 acres, and occupying about 80,000 houses, 5,462 houses in addition being at the present time void.

The average number of persons on each acre in 1879 was 46·3, in 1878 45·6, in 1877 44·9, in 1876 44·3, in 1875 43·6, in 1874 43·0, and in 1873 it was 42·4.

These mean densities of the population are of course to be regarded as averages only, and not as representing the actual number of persons on each individual acre.

The subjoined statement gives the estimated population to the middle of 1879, with the number of persons per acre, and the death rate from all causes, in some of the principal towns of the kingdom in the said year.

	Estimated population, 1879.	No. of persons per acre.	Death Rate.
London	3,620,868	48·0	23·3
Norwich	85,222	11·4	22·0
Birmingham ...	388,884	46·3	21·8
Liverpool	538,338	103·3	27·1
Manchester	361,819	84·3	26·9
Salford	177,849	34·4	24·9
Leeds	311,860	14·5	22·6
Newcastle... ..	146,948	27·4	23·6
Glasgow	578,156	95·8	21·7
Dublin	314,666	31·3	35·1

I have before remarked on the effect of density of population on health, the most densely populated areas being *cæteris paribus* the most unhealthy. A glance at the disease map will indicate at once, in the freedom of Edgbaston from certain forms of Zymotic disease, how much depends on the space occupied by each person, or the distance existing between the members of a community.

The

BIRTHS

registered during the year 1879, amount to 15,846, as compared with 15,964 in 1878, 16,001 in 1877, and 15,816 in 1876.

The following are the figures for each sex and the total numbers for each quarter of the year, since the commencement of 1873 :—

line year, since the commencement of the year.						
1873.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	TOTAL.	
Total ...	3,741	3,564	3,378	3,814	14,497	
Males ...	1,892	1,783	1,715	1,950	7,340	
Females ...	1,849	1,781	1,663	1,864	7,157	
1874.						
Total ...	3,814	3,871	3,493	3,710	14,883	
Males ...	1,953	1,961	1,753	1,853	7,520	
Females ...	1,861	1,910	1,740	1,857	7,368	
1875.						
Total ...	3,787	3,737	3,581	3,757	14,862	
Males ...	1,929	1,884	1,815	1,904	7,532	
Females ...	1,857	1,853	1,766	1,853	7,329	
Sexless ...	1	—	—	—	1	
1876.						
Total ...	4,140	3,924	3,803	3,949	15,816	
Males ...	2,045	1,996	1,959	2,028	8,028	
Females ...	2,095	1,928	1,844	1,921	7,788	
1877.						
Total ...	4,296	4,009	3,769	3,927	16,001	
Males ...	2,139	2,015	1,878	2,037	8,069	
Females ...	2,157	1,994	1,891	1,890	7,932	
1878.						
Total ...	4,139	4,096	3,849	3,880	15,964	
Males ...	2,160	2,051	1,962	1,982	8,155	
Females ...	1,979	2,045	1,887	1,898	7,809	
1879.						
Total ...	4,124	3,912	3,723	4,087	15,846	
Males ...	2,086	1,992	1,878	2,096	8,052	
Females ...	2,038	1,920	1,845	1,991	7,794	

The Birth-rate is this year 39·98 per 1,000 persons living; the rate for 1878 was 41·67. The Birth-rate for 1879 is however higher than the average of the ten years, 1868-77, which is 39·38. The Birth-rate, in fact, fluctuates from time to time with the depression and activity of trade, just in the same way as does the Marriage-rate, upon which it of course largely depends.

The Birth-rate per 1,000 of the population in the following large towns for the year 1879, is—

London.	Norwich.	Birmingham.	Liverpool.	Manchester	Salford.	Leeds.	Newcastle.	Average of large Towns.
36·5	34·1	40·0	38·9	36·3	40·1	36·9	36·8	36·2

DEATHS.

The Deaths registered in the year 1879 number 8,650, against 9,662 in 1878, and 9,038 in 1877. These 8,650 deaths are equal to an annual death-rate of 21·82 per 1,000 persons living: the rates in 1873, 4, 5, 6, 7, and 8, were respectively 24·8, 26·8, 26·3, 22·4, 23·9, and 25·2. It is very gratifying to be able to record so low a death-rate, which is not only 3·4 per 1,000 below that of 1878, showing a saving of 1,012 lives, but is as much as 2·54 per 1,000 less than the average death-rate of the previous 14 years, and lower than in any one of those years.

The contributory causes of this satisfactory improvement are to be found in several circumstances: first, a low summer temperature with its consequent smaller mortality from Diarrhœa; second, a total immunity from fatal Small-pox; third, a diminution of the severity of Scarlatina and Whooping Cough; fourth, a not too flourishing condition of trade, which is apt to lead to intemperance and excess; and last, but not least, the many sanitary works carried out by the department presided over by your Committee.

The death-rate here given will probably be found somewhat lower than that which will be published by the Registrar General, for reasons explained in my last Annual Report. With a view to save any misunderstanding, I will quote a few remarks I made last year on the subject:—"This difference is explained by a foot note in the Registrar General's Annual Summary for 1878, to the effect that 'the deaths in Birmingham . . . include paupers belonging to the Borough who died in the Workhouses situated outside the municipal boundaries.'

The Workhouses referred to are those of Erdington and King's Norton; the former receives paupers from that part of the parish of Aston situate in the Borough of Birmingham, and the latter receives them from that part of the parish of Edgbaston which constitutes a portion of the Borough.

In the statement below will be found the estimated population, its density, the actual numbers of Births and Deaths, with the Birth and Death-rates for each of the last fifteen years:—

Year.	Population Estimated in the middle of each year.	Density. Persons per acre.	Births.		Deaths.		Annual Rate to 1,000 living	
			Births.	Deaths.	Births.	Deaths.	Births.	Deaths.
1865	The Estimated Population in these years is not to be relied on.	—	12,699	8,014	38·87	24·5	...	...
1866		—	12,877	8,042	38·48	24·0	...	...
1867		—	13,029	8,318	38·01	25·6	...	...
1868		—	12,992	8,548	36·31	25·9	...	...
1869		—	12,779	7,737	35·53	23·1	...	...
1870		—	12,922	7,805	35·00	23·0	...	...
1871	...	41·1	13,443	8,594	39·00	24·9	...	...
1872	...	41·7	14,123	8,048	40·50	23·1	...	...
1873	...	42·4	14,497	8,990	40·78	24·8	...	...
1874	...	43·0	14,888	9,665	41·25	26·8	...	...
1875	...	43·6	14,862	9,668	40·57	26·3	...	...
1876	...	44·3	15,816	8,330	42·53	22·4	...	...
1877	...	44·9	16,001	9,038	42·39	23·9	...	...
1878	...	45·6	15,964	9,662	41·67	25·2	...	...
1879	...	46·3	15,846	8,650	39·98	21·8	...	...

The following Table gives the Death-rate per 1,000 of the population of Birmingham and the principal large Towns for the year 1879, and the six preceding years:—

DEATH-RATE PER 1,000 PERSONS LIVING.

Average of 20 large English Towns.			London.	Norwich.	Birm.	L'pool.	Manch.	Salford.	Leeds.	Newcastl.
1879	23·2	...	23·3	22·0	21·8	27·1	26·9	24·9	22·6	23·6
1878	24·4	...	23·5	24·6	25·2	29·4	27·9	25·6	23·8	23·8
1877	22·8	...	21·9	21·0	23·9	26·5	27·4	25·1	22·3	22·4
1876	23·6	...	22·3	21·9	22·4	27·6	29·2	31·9	25·1	22·8
1875	25·4	...	23·7	24·5	26·3	27·5	29·9	31·5	26·4	26·1
1874	25·4	...	22·5	23·5	26·8	32·0	30·4	29·6	28·7	29·2
1873	24·4	...	22·5	21·5	24·8	25·9	30·1	29·3	27·6	30·1

In the next statement are to be found the number of deaths of each sex, and the Death-rate for each quarter of 1879, together with the totals for each of the five preceding years:—

	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Total. 1879.	Total. 1878.	Total. 1877.	Total. 1876.	Total. 1875.
Total	2,545	2,143	1,591	2,371	8,650	9,662	9,038	8,330	9,668
Males	1,282	1,108	872	1,238	4,500	5,086	4,745	4,390	5,044
Females	1,263	1,035	719	1,133	4,150	4,574	4,292	3,939	4,623
Sex not known	—	—	—	—	—	2	1	1	1
Death-rate	26·18	22·04	16·35	22·64	21·82	25·20	23·95	22·40	26·34

The deaths are distributed among the eight Registration Sub-Districts into which the Borough is now divided, as follows :—

	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Total 1879.	Total 1878.	Total 1877.	Total 1876.	Death Rate. 1879.
Ladywood ...	321	253	177	275	1,026	1,154	950	890	20·2
St. Thomas. .	264	223	171	229	887	909	880	805	21·1
St. Martin ...	276	200	159	233	868	1,070	996	1,028	20·0
St. George ...	465	400	341	443	1,649	1,823	1,735	1,633	24·1
All Saints ...	399	399	262	424	1,484	1,603	1,571	1,376	34·2
Deritend ...	427	342	241	384	1,394	1,552	1,437	1,260	21·1
Duddeston ...	314	257	195	305	1,071	1,260	1,239	1,091	20·3
Edgbaston ...	79	69	45	78	271	291	230	247	12·3

The Registration Sub-Districts have again undergone a reduction] in number, there being now only eight instead of nine, the Sub-District of St. Mary having been amalgamated with that of St. George. In the above comparison of annual total deaths, the numbers under the heading of St. George comprise the deaths in both sub-districts, so as to render the different years comparable.

Excluding all the Institutions in the Borough, except the Workhouse, the death-rate last year is 20·7 ; excluding, also, the Workhouse, instead of appearing, as it now does, as 21·8, it would be only 19·3 per 1,000 persons living.

By eliminating from St. George's Sub-District the deaths in the General Hospital, the death-rate for that Sub-district is reduced to 20·9, while that of All Saints', by excluding the deaths that have occurred in the Gaol, Borough Hospital, Asylum, and Workhouse, instead of being 34·2, is actually 18·6.

The exclusion of the deaths that have taken place in the Children's Hospital from the Ladywood Registration Sub-District brings down the death-rate of that district to 18·9, while the subtraction of the deaths in the Queen's Hospital reduces the death-rate of St. Thomas' Sub-District from 21·1 to 18·2.

The number of deaths in each of the sixteen Wards of the Borough for each quarter of the year is given in the undermentioned statement :—

	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Total.
Rotton Park (W., B.H.) ...	338	291	180	275	1,084
All Saints (L.) ..	141	153	110	202	606
Ladywood (H) ...	195	136	91	158	580
St. Paul ...	81	114	81	109	385
St. George ...	161	130	101	144	536
St. Stephen ...	104	124	106	116	450
St. Mary (H.) ...	200	153	144	188	685
St. Bartholomew ...	193	131	117	140	581
Market Hall ...	105	80	60	94	339
St. Thomas (H.) ...	197	154	112	155	618
St. Martin ...	124	102	74	108	408
Edgbaston ...	105	81	60	103	349
Deritend ...	180	141	82	147	550
Bordesley ...	151	139	109	181	580
Duddeston ...	126	80	76	124	406
Nechells ...	144	134	88	127	493
Total ...	2,545	2,143	1,591	2,371	8,650

The following Table shows the number of deaths at various ætal periods for each of the quarters of 1879, and the totals for that and the two preceeding years :—

	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Total 1879.	Total 1878.	Total 1877.
Under 1 year of age...	657	569	477	682	2,385	2,768	2,629
Between 1 and 5 years	481	423	284	522	1,710	2,262	1,832
" 5 and 10 "	108	64	53	86	311	522	278
" 10 and 20 "	91	56	54	53	254	322	292
" 20 and 40 "	285	262	177	247	971	975	1,054
" 40 and 60 "	395	330	268	340	1,333	1,309	1,432
" 60 and 80 "	455	388	244	387	1,474	1,285	1,321
At 80 years and upwards	73	51	34	54	212	219	200

A comparison of the figures for 1878 and 1879 shows that there is a diminution in the number of deaths at each of the ætal periods up to 40 years, and at that above 80 years of age, while at the ætal periods between 40 and 80 years of age the number has increased. The smaller mortality under 1 year of age is principally owing to the unusually slight fatality of Diarrhœa in the summer and autumn months, owing to the comparatively low temperature which then prevailed, while the decrease in the number of deaths at the ætal periods between 1 and 20 years of age is to be ascribed to the subsidence of the Searlet Fever epidemic of the previous year; the rise in the mortality at the periods of life between 40 and 80 years of age is chiefly due to the very great prevalence of Bronchial and other chest affections at the beginning and end of the year, on account of the excessively cold weather which characterised the first few months and the last month of the year.

The average age at death for the four quarters of this and the previous year is as follows :—

	1879.	1878.
First Quarter	27 years 8 months	24 years 2 months
Second "	25 " 7 "	24 " 0 "
Third "	24 " 11 "	17 " 8 "
Fourth "	22 " 10 "	23 " 3 "
Whole Year	25 " 2 "	22 " 2 "

The death age for the year is thus seen to be three years higher than that for 1878. This rise in the average age at death is to be attributed mainly to the almost total absence of Infantile Diarrhœa in the Summer Quarter, as a result of which the average death age for that particular Quarter was as much as $7\frac{1}{4}$ years higher than that for the same period of the previous year.

A Chart showing the curves of the death rate and death age during the year is annexed.

INFANT MORTALITY.

The percentages of Deaths of Infants under one year of age on the Births Registered in Birmingham, and the principal English towns during the seven years, 1873-9 are given below :

	Average of 20 large English Towns.	London.	Norwich.	Birm.	Liverpool.	Manchstr.	Salford.	Leeds.	Newcastle.
1879	15.1	14.8	15.9	15.0	16.3	16.5	17.0	16.1	14.5
1878	17.2	16.4	21.1	17.0	19.3	17.5	18.5	18.8	16.1
1877	15.4	14.6	15.4	16.4	18.8	16.1	16.1	16.5	15.1
1876	16.7	15.7	17.8	16.0	20.8	18.0	18.9	18.1	16.7
1875	17.6	16.2	21.0	19.6	21.0	18.4	17.8	19.7	18.7
1874	17.5	15.6	17.8	17.8	23.3	19.7	18.9	19.9	19.8
1873	17.4	16.0	16.1	18.1	21.3	20.0	18.5	19.4	18.7

It is thus seen that there is a fall of 3 per cent. in seven years, and that the percentage is lower than in all the towns named except London and Newcastle.

This considerable decrease on the rates in previous years, notwithstanding the lower Birth-rate, is principally accounted for by the most unusually small mortality from infantile diarrhoea.

The percentages of Deaths under one year on the Deaths at all ages and from all causes in the large English towns during 1879, and the six preceding years have been as follows :—

Average of 20 large English Towns.		London.	Norwich.	Birm.	Liverpool.	Manchstr.	Salford.	Leeds.	Newcastle.
1879	... 23·9	... 23·2	24·7	27·5	23·3	22·4	27·3	26·3	22·6
1878	.. 26·5	... 25·2	28·7	28·6	25·5	24·0	30·5	31·0	25·8
1877	... 25·5	... 24·1	24·7	29·1	27·5	22·6	27·1	29·7	26·6
1876	... 26·9	... 25·7	27·0	30·5	29·6	24·5	29·2	29·9	30·4
1875	... 26·2	... 24·4	28·0	30·6	29·4	24·3	26·7	30·1	29·1
1874	... 26·4	... 24·9	24·0	27·8	28·2	25·4	28·2	28·8	27·5
1873	... 27·0	... 25·2	24·5	29·2	30·4	25·7	27·2	28·0	27·1

It is seen that, when compared with the total Deaths, the rate of Infant Mortality has also diminished, but the results are not so satisfactory, the figures 27·5 being high compared with other towns; they indicate a grave defect in the management of infants, and although it is true that the decrease would have been greater but for the fact that the lower mortality during 1879 has not been confined to the period under one year of age, but has been distributed over the majority of the other periods of life, yet the same explanation would apply to other towns.

ZYMOTIC DISEASES.

The deaths from this group of diseases, including Small-pox, Measles, Scarlet Fever, Diphtheria, Fever, Whooping Cough, and Diarrhoea number 1,254, against 2,421 in 1878, and 1,576 the average number for the five years 1873-1877. The Zymotic death rate is this year only 3·2 per 1,000 persons living, as compared with rates of 5·6, 7·3, 5·9, 3·6, 4·2, and 6·3 in the years 1873, 4, 5, 6, 7, and 8 respectively, and is therefore lower than in any year back to 1873, a fact which must be hailed on all hands with unqualified satisfaction, because it is one of the best proofs of improved general sanitary condition and of the value of sanitary work.

The following are the Zymotic death rates in the principal large English towns for the years 1873-9, both inclusive :—

	Average of 20 large English Towns.		London.	Norwich.	Birm.	Liv'rpool.	Manchestr.	Salford.	Leeds.	Newcastl.	
1879	...	3·2	...	3·3	2·2	3·2	6·0	3·4	4·0	3·3	3·9
1878	...	4·4	..	4·1	3·6	6·3	6·1	4·0	5·1	4·5	4·6
1877	...	3·5	...	3·5	2·9	4·2	4·7	4·2	4·8	2·8	2·5
1876	..	4·1	...	3·6	2·9	3·6	6·1	5·2	8·5	4·5	2·5
1875	...	4·4	...	3·9	4·3	5·9	4·5	4·6	7·2	4·6	3·6
1874	...	4·5	...	3·3	2·0	7·3	8·4	5·5	6·5	6·3	5·5
1873	...	3·9	...	3·3	2·2	5·6	4·0	5·9	6·0	5·6	6·8

The subjoined statement gives the per centage of Zymotic deaths on total deaths in the same towns and for the same period of time as the previous Table :—

	Average of 20 large English Towns.			London.	Norwich.	Birm.	Liv'pool.	Manchestr.	Salford.	Leeds.	Newcastl.
1879	...	13·8	...	14·3	10·0	14·5	22·1	12·8	16·1	14·6	16·5
1878	...	18·2	...	17·6	14·5	25·1	21·9	14·3	19·9	19·0	19·2
1877	...	15·4	...	16·0	13·8	17·4	17·8	15·4	19·1	12·6	10·3
1876	...	17·3	...	16·1	13·2	16·0	22·1	17·8	26·6	17·8	11·0
1875	...	17·5	...	16·5	17·6	22·2	16·4	15·5	22·9	17·4	13·8
1874	...	18·0	...	14·9	9·0	27·4	25·2	19·7	22·0	22·0	18·6
1873	..	16·3	...	14·9	10·1	23·8	19·1	19·7	20·3	22·9	22·0

*WHOOPI*NG *COUGH* has proved the most fatal among the Zymotic diseases, being accountable for 384 deaths. Although this number is high it is nevertheless lower than that of the previous year by 71, the deaths in that year numbering 455. The largest number of deaths from this disease, both actually and relatively to population, has been registered in St. George's Registration Sub-District. This district is the most densely populated of the eight Registration Sub-Districts, and had last year also the greatest proportionate mortality from this particular Zymotic.

SCARLET FEVER, which last year occasioned no fewer than 995 deaths, and occupied the first place in order of fatality, stands this year second on the list with 309 deaths. As was the case last year so again this, it has been pretty equally distributed over the Borough, as will be seen by reference to the Disease Map appended, but it has been somewhat more fatal in Deritend Registration Sub-District than elsewhere. This disease is one against which it is necessary continually to guard, for it is always with us; Small-pox, which is so much dreaded, is nothing like so destructive of life and yet, while the latter readily alarms people into precaution the former is accepted with almost the calmness of resignation.

DIARRHŒA occupies the third position in order of fatality, having caused 234 deaths. This number is considerably lower than any on record, and compares with 680 in 1878, and 656, the annual average for the five years, 1874-8. The largest number of deaths from this cause has been registered in the Sub-District of All Saints, which contains among other Institutions, the Workhouse.

Sixty-five per cent. of the deaths were among infants under one year of age, and 88·4 per cent. in children under five years of age, pointing as usual to insufficient care and defective feeding during early childhood.

The Diarrhœa death-rates during 1879, in the principal large English towns per 1,000 of the population, are—

London.	Norwich.	Birm.	Manchester.	Salford.	Liverpool.	Leeds.	Newcastle.
0·5	0·6	0·6	0·6	0·9	0·8	0·8	0·4

MEASLES stands next in the order of destructiveness among the Zymoties, the deaths from this cause amounting to 169, against only 54 in 1878. This disease was widely spread over the Borough during the closing months of the year.

FEVER. To the three forms of Fever (Typhus, Typhoid, and Simple Continued), eighty-seven deaths have been referred by the Registrars' Returns, a number which is greatly lower than in any one of the years over which my records extend.

I have in previous Reports remarked upon the gradual decline in the cases of Typhoid Fever from year to year, a decline not confined to Birmingham, but exhibited by the generality of the great towns of England, and possessing all the more interest from the circumstance that it is an undoubted, perhaps the best indication of the improved and improving general state of towns, the result

of sanitary work systematically carried out. It is impossible that such a progressive improvement in the large towns generally, and in Birmingham in particular, can be the result of a series of happy accidents, it is only one of the many incidents marking sanitary progress, such as the partial or complete banishment of diseases like Plague, Typhus, Ague, and Small-pox, and like them it clearly shows the possibility of overcoming the other Zymoties such as Scarlet Fever, Measles, Whooping Cough, and Diphtheria, when we shall become sufficiently informed upon their nature and careful enough to apply the knowledge.

The Death-rates from Fever in Birmingham, and in twenty large English towns since 1870, are given in the following statement :—

Birmingham.						20 large Towns.	
1870	...	...	·63 per 1,000 per annum			...	·90
1871	...	...	·53	...	...	...	·78
1872	...	...	·54	...	...	...	·60
1873	...	...	·57	...	...	...	·59
1874	...	...	·56	...	...	...	·58
1875	...	...	·56	...	...	...	·52
1876	...	...	·40	...	...	...	·45
1877	...	...	·38	...	...	...	·42
1878	...	...	·38	...	...	...	·42
1879	...	...	·22	...	...	...	·29

DIPHTHERIA has been certified as resulting in 71 deaths, against 83 in 1878, 52 in 1877, and 58 in 1876.

Judging from the gradual diminution of the mortality from Diphtheria since 1873, when active sanitary work in the Borough may be considered to have commenced, Diphtheria may be reasonably regarded to be, like Typhoid, a good test of sanitary condition, and of the progress and practical value of public sanitation. During the period named, the mortality of the disease has decreased from ·31 to ·18 per 1,000 of the population, thus :—

1873.	1874.	1875.	1876.	1877.	1878.	1879.
·31	·21	·16	·16	·14	·22	·18

It is true that in 1878 there was a rise in the death rate, but it must not be forgotten that in this year there raged a very severe epidemic of Scarlet Fever, which is very often either complicated with or mistaken for Diphtheria, so that this exceptional figure need not be regarded as disproving the value of the Diphtheria mortality as a test of better sanitary conditions.

Some cases occurred in the Small Heath district in the last quarter of the year, and it seemed probable that they had a connection with the outbreak at Acock's Green, but the investigation I made did not lead me to conclude that such was the case. The distance between Acock's Green and Small Heath is very considerable, there is no communication between the sewers of the two districts, and the *milk* supply had evidently no part in the production of the cases, which, as usual, were sporadic, and were associated, for the most part, with sanitary defects.

Diphtheria and Typhoid being the most preventable of the Zymotic diseases, I have made a point of visiting and investigating the conditions surrounding every case that has come to my knowledge, and have from time to time reported to you the results; it may not be uninteresting or unprofitable just to summarise here the results of my observations. The agencies most likely to be concerned in the propagation of, or predisposition to these two diseases, are time of year, *Milk*, situation, elevation, condition of houses, dampness, water supply, privy accommodation, the keeping of animals, and drain air.

Diphtheria occurs in Birmingham at all times of the year, and never as a sudden epidemic ; it is most prevalent, however, in the fourth quarter of the year. Typhoid occurs with similar regularity.

Diphtheria and Typhoid have no special *habitat*, but are impartially distributed over the Borough with the exceptions referred to in the remarks upon the distribution of Scarlet Fever, Measles, and Typhoid as shown by the Disease Maps.

Elevation does not seem to exert a very marked influence, for while the lowest point in the Borough is 310 feet and the highest point is 600 feet above the level of the sea, the lowest and highest points at which Diphtheria occurred are 340 and 590 feet respectively, while the lowest and highest points at which Typhoid has been reported are respectively 345 and 520 feet above the sea level, and cases have occurred at all elevations between these points. It appears, however, that Diphtheria prevails most in the higher and Typhoid in the lower parts of the town.

The *condition of the houses* was generally fairly clean, about one-sixth being decidedly dirty as to paint, paper, and domestic arrangement. Twenty-eight per cent. of the houses in which Diphtheria and forty-seven per cent. of those in which Typhoid Fever occurred were of the back-to-back form of construction.

Dampness of house, arising principally from water in cellars, does not appear to have been largely instrumental in determining the occurrence of Diphtheria or Typhoid cases, for in only two instances was there wet in the cellars in connection with the former and in four instances in connection with the latter disease. Some observers have regarded dampness as the principal factor in the production of Diphtheria, but though there is no doubt of its acting as a contributory cause, the facts as regards the cases occurring in the Borough last year are opposed to the view.

The *water* in about one-third of the cases of Diphtheria and about one-fifth of those of Typhoid was derived from surface wells, the remainder from the Corporation supply.

The *privy accommodation* consisted of about fifty per cent. privies with ashpit middens and fifty per cent. pan privies, only two water closets being found in connection with the Diphtheria and three with the Typhoid cases.

It is difficult, therefore, to regard any one of the agents already enumerated as exerting by itself any great influence in the causation of the two diseases ; when, however, the question of drainage comes to be considered the case is different, for 70 per cent. of the Diphtheria and 50 per cent. of the Typhoid cases were associated with drainage defects and excrementitious animal filth on the surface, caused by the keeping of fowls, ducks, and pigeons in courts and houses.

The *keeping of animals* in houses and courts leads to filthy surfaces and vitiated air which has a depressing effect, and renders the system more prone to receive infection, and to suffer from low type disease generally. I am strongly of opinion that the practice should be discouraged, and if possible abolished, because while it is an undoubted sanitary evil it is unattended by any pecuniary advantage.

The action of *drain air* proves to have been the most general one in cases of Diphtheria and Typhoid, but there is good reason to believe that its effect is favoured and intensified by some of the other insanitary agents mentioned above.

SMALL-POX. Only four cases, and not a single death, have occurred from this disease during the year ; in 1878 the cases numbered twenty-seven, and the deaths, five.

DEATHS AND DEATH-RATE FROM SMALL-POX PER 100,000 OF
THE POPULATION.

Town.	Population.	Deaths from Small-pox in the year 1879.	Rate per 100,000			
			1879.	1878.	1877.	1876.
London	3,620,868	458	12·7	39·6	72·0	21·1
Brighton	105,608	0	0·0	0·0	0·0	0·0
Portsmouth	131,821	0	0·0	0·0	0·8	0·8
Norwich	85,222	0	0·0	2·4	0·0	2·4
Plymouth	74,293	0	0·0	0·0	0·0	0·0
Bristol	209,947	0	0·0	0·0	0·0	17·0
Wolverhampton	75,100	0	0·0	0·0	0·0	0·0
Birmingham	388,884	0	0·0	1·3	2·1	0·0
Leicester	125,622	0	0·0	0·0	0·9	0·0
Nottingham	169,396	1	0·6	0·0	0·0	0·0
Liverpool	538,338	0	0·0	0·6	56·7	68·4
Manchester	361,819	1	0·3	0·3	13·3	55·9
Salford	177,849	0	0·0	0·6	57·1	250·7
Oldham	111,318	0	0·0	0·9	26·7	7·9
Bradford	191,046	0	0·0	0·6	2·2	0·6
Leeds	311,860	0	0·0	0·0	1·0	1·4
Sheffield	297,138	0	0·0	0·3	0·7	0·3
Hull	146,347	0	0·0	0·7	0·7	0·0
Sunderland	114,575	0	0·0	0·9	0·0	0·0
Newcastle-on-Tyne	146,948	0	0·0	0·0	0·7	0·7
In 20 Towns	7,383,999	460	6·1	20·2	42·8	24·9

The statement below shows the number of cases and deaths that have occurred in each Quarter since 1871 :—

DATE.				Cases.		Deaths.	
1871.							
November 11th to end of year	...	...	...	359		43	
Total	...	...	...	—	359	—	43
1872.							
1st Quarter	...	...	...	798		96	
2nd "	...	...	...	632		62	
3rd "	...	...	...	355		67	
4th "	...	...	...	192		44	
Total	...	...	...	—	1,977	—	292
1873.							
1st Quarter	...	...	...	171		29	
2nd "	...	...	...	246		37	
3rd "	...	...	...	124		18	
4th "	...	...	...	253		38	
Total	...	...	...	—	794	—	122
1874.							
1st Quarter	...	...	...	757		123	
2nd "	...	...	...	1,303		196	
3rd "	...	...	...	1,059		165	
4th "	...	...	...	672		153	
Total	...	...	...	—	3,791	—	637
1875.							
1st Quarter	...	...	...	366		85	
2nd "	...	...	...	347		72	
3rd "	...	...	...	95		14	
4th "	...	...	...	16		2	
Total	...	...	...	—	824	—	173
1876.							
1st Quarter	...	...	...	2		0	
2nd "	...	...	...	2		0	
3rd "	...	...	...	2		0	
4th "	...	...	...	5		0	
Total	...	...	...	—	11	—	0

1877.					
1st Quarter	...	...	...	7	1
2nd "	...	...	...	20	3
3rd "	...	...	...	20	3
4th "	...	...	...	3	1
Total				50	8
1878.					
1st Quarter	...	...	...	3	0
2nd "	...	...	...	4	0
3rd "	...	...	...	10	2
4th "	...	...	...	10	3
Total				27	5
1879.					
1st Quarter	...	...	...	1	0
2nd "	...	...	...	0	0
3rd "	...	...	...	3	0
4th "	...	...	...	0	0
Total				4	0
Grand Total				7,837	1,287

It is very gratifying to find that out of nineteen of the largest towns in England only two deaths occurred from Small-pox during the whole year, viz., one in Nottingham and one in Manchester, a considerable epidemic, however, having existed in London; the fact is gratifying inasmuch as it proves how much this most infectious disease admits of being, and has actually been during the year, held in check by the active employment of

VACCINATION.

During the last year for which Vaccination Returns are available, the Public Vaccinator of the Parish of Birmingham successfully vaccinated 8,170 persons, a number not including the operations performed by private practitioners. Of the children registered as born in the parish during the year, 500, or 5.1 per cent., escaped vaccination by removal to places which could not be reached.

A reference to Table XVI. will show that out of 5,638 children born in that portion of the Parish of Aston which is within the Borough, 4,650 were successfully vaccinated, and 385 or 8.3 per cent. remained unaccounted for, while in that portion of the Borough within the Parish of Edgbaston, out of 483 registered births, 42 or 7.8 per cent. removed to districts beyond the control of the Vaccination Officer.

The Vaccination Statistics recorded in the Table have been supplied to me by Mr. Wilcox, Vaccination Officer for the Parish of Birmingham, Mr. Stephens, Vaccination Officer for the Parish of Aston, and Mr. E. Docker, Vaccination Officer for the Parish of Edgbaston, for whose courtesy and kindness I feel pleasure in expressing my indebtedness and thanks.

It is to be noticed that these Returns are not for the year 1879, but for that ending June, 1879, (as the Act does not strictly apply to children under three months old,) and are copies of those made to the Local Government Board.

Among

CONSTITUTIONAL DISEASES,

the deaths from Phthisis, Dropsy, and Tabes Mesenterica have somewhat diminished, while those from Cancer have increased.

LOCAL DISEASES.

Of those of the Nervous System, the number of deaths from Convulsions, Brain Disease, and Epilepsy show a material decline on the figures for 1878, while on the other hand the deaths from both Apoplexy and Paralysis are more numerous.

The deaths caused by diseases of the Organs of Circulation exhibit an increase on the number in the previous year, as do also those from diseases of the Respiratory Organs, Pneumonia being the only disease in this class which is not credited with a heavier mortality than in 1878. The deaths from diseases of the Digestive Organs show but slight variation on the numbers in the previous year with the exception of those of the Liver, which have further decreased. The mortality from diseases of the Urinary Organs, Organs of Generation, and Organs of Locomotion has not materially changed, while that from diseases of the Integumentary system is somewhat greater than in 1878.

With regard to

DEVELOPMENTAL DISEASES

it is worthy of remark that the deaths under every heading of importance, with the exception of Childbirth, show a decrease on the numbers in 1878.

To Childbirth and Puerperal Fever (Metria) 65 deaths have been attributed as compared with 75, 52, 59, and 49 in the years 1875, 6, 7, and 8 respectively. The Death-rate from these causes per 1,000 births registered during the year is 4.1 against 3.1 in 1878.

DISEASE MAP.

This year the total number of Deaths from the three diseases, Scarlet Fever, Measles, and Typhoid, being much less than that of last year, instead of employing three maps, or one for each disease, I have exhibited the distribution of the deaths all on a single map. The fatal cases of Scarlet Fever are indicated by red spots, those of Measles by red crosses, and those of Typhoid by blue crosses; in this way considerable economy of time and space is obtained without in this instance any sacrifice of clearness by too much crowding of the signs.

The remarks in my Annual Report for 1878 upon the distribution of these diseases over the Borough apply equally well to their distribution in 1879, the central portion of the town, embracing more particularly Market Hall and St. Paul's Wards, escapes most lightly, as also do the outlying portions of the town and Edgbaston Ward, for the reasons stated, viz., a more scattered population and superior sanitary and social conditions.

Attention having been drawn to the Birmingham and Midland Eye Hospital by an article in the *British Medical Journal*, I was instructed by a resolution of your Committee to inspect and report upon the Institution. The following is a copy of my Report:—

MEDICAL OFFICER OF HEALTH'S DEPARTMENT,
PUBLIC OFFICE, BIRMINGHAM,

August 25th, 1879.

TO THE HEALTH COMMITTEE.

MR. CHAIRMAN AND GENTLEMEN,

In reference to Minute No. 6,900, I beg to report that I visited the Birmingham and Midland Eye Hospital, on Wednesday and Thursday last, and made the required examination. I was met by the Chairman (Mr. Goodman), the Architect (Mr. Osborn), and the Plumber, also by Messrs. Chessire and Eales,

who rendered me every assistance possible, and furnished me with much valuable information, thus greatly facilitating and expediting the work of inspection.

The Hospital contains a basement and four floors, viz., the ground and first, second, and third floors. The uppermost or third floor is set apart entirely for males, and has upon it four wards numbered respectively 22, 24, 27, and 30, the measurements of which will be found below. The second floor is divided into two parts, one for males, and the other for females.

On the male side is ward No. 19 and the men's day room, and on the females side wards 14 and 17.

The first floor is occupied by wards 7 and 12 for females called "Collins" and "Crowther" wards, and the women's day room.

The ground floor has upon it the consulting room, out-patients' visiting room, dispensary, matron's sitting room, and the committee room; while in the basement are the kitchen, scullery, and larders, and in another part two water-closets and urinal for the use of the out-patients and servants.

WARD.	MEASUREMENTS.	Area in feet.	Cubic Contents in feet.	No. of Beds.	Superficial feet per bed. ft. in.	Cubic feet per bed.
THIRD FLOOR.						
No. 22 Males ...	19·6 × 23·0 × 7·8	448½	3453	6	74 9	575½
" 24 " ...	19·6 × 22·6 × 7·8	438¾	3260	6	73 1½	563
" 27 " ...	14·6 × 19·4 × 7·8	280	2158	4	70 0	539
" 30 " ...	14·0 × 22·6 × 7·8	315	2425	5	63 0	485
SECOND FLOOR.						
" 19 "	19·0 × 23·0 × 9·0	437	3033	6	72 10	655
Nurses' Day Rm.	21·0 × 27·3 × 9·0	572	5150			
No. 14 Females	13·9 × 22·3 × 9·0	306	2753	5	61 2	552
" 17 "	14·6 × 19·0 × 9·0	275½	2479½	4	68 10	620
FIRST FLOOR.						
" 7 "	14·0 × 22·6 × 10·0	315	3150	5	63 0	630
" 12 "	14·6 × 16·0 × 10·0	232	2320	3	77 4	773
Women's Day Room ... }	27·0 × 22·5 × 10·0		6226			
Corridor	49·0 × 11·0 × 10·0		5390			
Out - Patients' Waiting Room ... }	25·4 × 19·9 × 11·9		5873			
Consulting Room	27·0 × 21·4 × 12·0		6943			

There is a large, well-lighted corridor on the first floor, of a capacity of 5,390 cubic feet, the corresponding corridor on the floor above being enclosed for a nurses' room.

WATER CLOSETS, BATHS, AND LAVATORIES.

On the third floor are a water closet and an urinal; they are both well constructed and in good order, the urinal is flushed automatically whenever the door is opened. Both closet and urinal are ventilated by a window in the water

closet which cannot be closed at either top or bottom, and by a Watson's ventilator, 2ft. 3in. diameter, opening through and above the roof.

There is on this floor also a bath room, with bath and sink, the outlets of which are well protected from the possibility of the entrance of sewer gas, by discharging into a Mansergh's trap, which effectually severs the connection with the sewer.

The closet, bath, and sink arrangements on the second floor are similar to those on the third floor.

On the first floor there is a water closet, but no bath, &c. The water closets are all by Jennings, and of the best construction, cleanly, copiously flushed, and well sealed, and the soil pipe is of lead, perfect and new throughout, except 14 feet through the Hotel water closet, which on examination was found to be of strong 8lb. lead, in perfect order. There are no leakages whatever in the joints of any of the pipes, which are nearly all new, of lead and strong. The soil pipe from the upstairs closets is partly outside and partly inside the building, and in no part of its course does it consist of sanitary pipes. Before 1877, when considerable improvements in drainage and ventilating were effected, the part of the soil pipe running under the hall was constructed of sanitary pipes, and a leakage through them once occurred into the floor and Hotel cellars beneath, but those pipes were removed and replaced by lead at the date mentioned, since which no leakage has taken place. The floor is dry, the cellars beneath are the same, and I could discover no disagreeable odour. The soil pipe is ventilated from its upper extremity through the roof by a pipe 3 or 4 inches in diameter, so that there is no chance of sewer gas forcing the traps of the water closet or urinal. At its lower end it terminates in a water sealed syphon trap, situated in the passage leading to the Hotel, which on inspection I found to contain only clean, transparent water. This trap effectually cuts-off communication of the soil pipe with the drain which runs along the passage. I have suggested as an improvement that the soil pipe just before joining the trap be placed in communication with the air, so that free ventilation of the soil pipe may be established, and this recommendation will be carried into effect.

I was unable to verify the statements that there is an opening in the barrel drain, and a lighted candle is extinguished by the current of air in the soil pipe which emptied into it, or that the wall on the main staircase is damp and offensive, or "that owing to defective joints a disagreeable smell is frequently present in the basement."

The closets are all in the body of the building, but they are against outside walls, and are therefore provided with and ventilated by windows which cannot be shut, like the one described above; and in the two water closets in the basement perforated zinc is in addition substituted for glass. The soil pipe of these two water closets terminates in a separate trap in the same passage outside the Hotel, and is completely severed from the drain.

There is no connection between the soil pipes and the waste pipes, the latter all opening into the Mansergh trap already mentioned, and which is situated in the yard at the back, except those from the two wash basins in the consulting room and that from the sink in the kitchen. These discharge directly into the drain, the pipes from the wash basins being guarded by syphon traps in the cellar, and the kitchen being guarded only by a D trap on the sink. These are the two worst defects in connection with the drainage arrangements, and I have recommended that they be both removed, which recommendation will be at once attended to.

VENTILATION.

The general ventilation of the Hospital is effected by means of two large openings 4ft. by 2½ft. in the skylight at the top of the well of the staircase, which is in connection with every floor, by a Watson's ventilator on the third floor, 52 by 30 inches diameter, by another on the second floor just outside the men's day room, the door of which is kept open, this ventilator is placed purposely close to the door of the men's day room, but outside it so as not to occasion a draught which would be inadmissible, and by another Watson's ventilator at the top of the lift 20 inches by 10 inches, and in order to assist in the diffusion and circulation of air through the whole building, gratings are introduced into the floor of the second floor corridor, and there is a large louvre over hall door, 5ft. 3in. by 1ft. 6in.

The ordinary ventilation of the wards and other rooms by doors, windows, and fireplaces is supplemented by Tobin's tubes, and in some cases by louvre openings between the rooms and the corridors. There is a louvre in No. 22 ward, on the third floor, and another in the men's day room on the 2nd floor.

The Tobin's tubes are disposed as follows:—

WARD 22	Two tubes, each 9 inches by 6 inches, draught at the time of my observations varying considerably in direction : there is also a louvre opening between the ward and the corridor which was acting as an outlet to the air of the ward.
WARD 24.	Two tubes, each 9 inches by 6 inches, draught inward and outward by turns.
WARD 27.	One tube, 10 inches by 5 inches, powerful and steady inward current.
WARD 30.	One tube, 9 inches by 6 inches, draught outward with the door open, no draught with the door shut.
WARD 19.	Two tubes, each 9 inches by 6 inches, draught variable.
MEN'S DAY ROOM.	Three tubes, each 9 inches by 6 inches, also a shaft 21 inches by 8 inches. Tobin's tubes acted feebly, but only when the doors and windows were shut.
WARD 7. (Collins').	One tube, 9 inches by 6 inches, which conveyed a feeble inward current when the doors and windows were shut on the first day I visited, but no current in either direction on the second day of examination.
WARD 12. (Crowthers')	One tube, 9 inches by 6 inches, very strong inward draught.
WARD 14.	One tube, 9 inches by 6 inches, inward draught when door was shut.
WARD 17.	One tube, 9 inches by 6 inches, inward draught.
WOMEN'S DAY ROOM.	Two tubes, each 9 inches by 6 inches, inward draught with door shut.
OUT-PATIENTS.	One louvre opening in window.
WAITING ROOM.	One louvre opening in side wall near foot of the principal staircase in the entrance hall. Four Tobin's tubes did not act at all, which could hardly be expected from their construction, the lower or horizontal limbs being of enormous length and at right angles with the upper or vertical tubes.
CONSULTING ROOM.	Two tubes, 10 inches by 6 inches, did not act.
THE DISPENSARY	is ventilated on the one side by a window into the passage leading into the Hotel, and in the other into entrance hall.

THE KITCHEN is ventilated by windows and by the lift employed for conveying the food from the kitchen to the upper stories. When the doors of the lift on the different floors are opened a distinct upward draught is perceptible bringing with it an odour of cooking.

Such are the principal points of the systems of drainage, ventilation, and disposal of patients.

The rooms and wards are clean and dry, but the walls of the passages and staircase might be advantageously re-papered and varnished. The bedding is all quite new and scrupulously clean.

I am bound to testify that everything has been done with the present building in order to render it as suitable as possible for its purpose. The committee appears to have given *carte blanche* to their architect to introduce every improvement possible in the drainage and ventilation of the Hospital, and the measures taken have, with slight exception, been well conceived and efficiently carried out, but unfortunately the building is of such a construction and in such a situation that no thoroughly satisfactory result is possible.

The wards are too low and too small, their proper ventilation owing to the surrounding buildings is impossible, and consequently much of the ventilation is borrowed instead of being taken at first hand from the open air, and some of the ventilating arrangements, as the Tobin's tubes, act in no definite direction, often in the wrong direction, and are too small to be efficient in purifying the air. Consequently, as would be expected, the wards are described as being very close when occupied by the patients, particularly at night, which is the best proof of the insufficiency of the ventilation.

The maximum area for each bed is only 77ft., and the minimum is 61ft., the average being 69.5; the maximum cubic space to each bed is 773ft., the minimum is 485ft., while the average is 599 cubic feet, which is much too little. Although the Hospital is not one for infectious diseases, I consider it ought not to have less, under the most favourable circumstances, than 1,000 cubic feet per bed, and more is desirable.

The men's day room, with a cubic capacity of 5,150 cubic feet, is commonly occupied by 20 patients, giving 257 cubic feet each, but on visiting days the number in the room is said to reach 50 or more, and for 50 there would be only 103ft. per head.

The women's day room, I was informed contained ordinarily about 17 patients, which would be 366 cubic feet per head, but on visiting days this would be greatly diminished; moreover divine service for men as well as the women is held daily in this room. At the time of my visit service was about to commence, and there was distinct evidence of an impure atmosphere.

The out-patients waiting room, with a capacity of 5,873 cubic feet, is said to be occupied frequently by 100 persons and even as many as 150 sometimes; the former number gives only about 59 cubic feet, while the latter gives less than 40 cubic feet per head, an amount of air totally and alarmingly inadequate for health, indeed it is stated that patients are often removed from it in a fainting condition. It is unfortunate that the four Tobin's tubes in this room do not act as ventilators judging from their condition when I examined them. The reason for this want of action I have already explained.

The consulting room adjoining is commonly overcrowded, and from the position of these two rooms the effluvia from their occupants must necessarily be diffused through the Hospital and contaminate more or less the air of the wards and day rooms up stairs.

The benefit derived from the improvements made in 1877 is clear and distinct ; it appears to have resulted in the discontinuance of the intermittent visitations of erysipelas, which before were not uncommon, and has led some to assert that the Hospital is now perfectly healthy, but I have reason to believe that this statement is not to be unreservedly accepted, for I am informed on good authority that vomiting and diarrhœa are quite common with persons recently come into the Hospital, that a low type of fever sometimes attacks patients before they have been operated upon, and that suppurative cellulitis is suspiciously frequent after the most skilful and successful operations.

It is quite clear on these facts that the present building is unfitted for an Hospital and that it is impossible to make it fit. The committee of management and the medical staff seem quite aware that some change is needed, but the time for the change and the kind of change desirable is a question upon which there is a difference of opinion. With regard to the time, it is thought that the present, being a period of commercial depression, is unsuitable, and therefore that it is desirable to wait, with regard to the kind of change, one view proposed by the committee is that the building should be gutted from basement to roof, using the old walls and raising on the top of them two more stories, making six stories exclusive of the basement. Under these circumstances, the structure would be excessively high even for a town building, and that most objectionable feature, the out-patients' department, would be retained in its present faulty position, and increased in size, while the very small yard at the back, the only bit of area attached to the Hospital would be obliterated. Such a scheme I consider to be altogether inadvisable for a permanency, and for a temporary purpose it would be a waste of money.

I am of opinion that the Hospital should as early as possible be removed to a roomy, healthy site, where all the conditions of good natural ventilation, and all the advantages of pure air, light, space, and proper structural arrangements could be fully secured.

I remain,

Mr. Chairman and Gentlemen,

Your obedient Servant,

ALFRED HILL, M.D.,

Medical Officer of Health.

METEOROLOGY.

The Returns, kindly furnished by Mr. D. Smith, F.R.A.S., for the past six years, show the

			1879.	1878.	1877.	1876.	1875.	1874.
Mean temperature of 1st Quarter	..		36°·9	42°·4	42°·4	39°·0	40°·4	41°·4
"	"	2nd "	...	49°·5	54°·5	51°·4	51°·2	53°·7
"	"	3rd "	...	58°·3	60°·9	58°·4	61°·3	60°·0
"	"	4th "	...	42°·0	40°·9	45°·5	46°·2	42°·5
"	"	Year ...	...	46°·6	49°·1	49°·5	49°·4	49°·1
								49°·0

The mean temperature for each Quarter was considerably under the average, while the rainfall was as much as six inches above the average. Particulars of the monthly pressure of the air, highest, lowest, and mean shade temperature, amount and weight of rain collected, and the number of days on which upwards of $\frac{1}{16}$ th of an inch was collected are to be found in Table XII. The mean monthly temperatures and rainfall for the ten years, 1869-78, are contained in Table XIII.

BOROUGH HOSPITAL.

Into this institution there have been admitted during the year 184 cases of Scarlet Fever, and 1 case of Small-Pox, as compared with 424 cases of Scarlet Fever and 29 of Small-Pox in 1878.

The cases of Scarlatina treated in the institution do not all belong to the Borough; you are aware that arrangements have been made with the authorities of certain outlying districts which are not provided with Hospital accommodation, to treat such cases. These authorities are the Board of Guardians of Aston, and the Local Boards of Aston, Saltley, Balsall Heath, and Smethwick. Six patients were sent during the year by the Aston Board of Guardians, and one by the Saltley Local Board.

During the first quarter of the year another new ward, closely resembling the last, but marked by certain improvements in the mode of warming, and containing beds for thirty children, was brought into use for the treatment of Scarlet Fever cases. It is an excellent ward, having abundance of cubic space, being well lighted and efficiently ventilated, and in every way admirably suited for its purpose.

In the following Table are given the number of Patients treated in the Hospital in each quarter since its establishment:—

DATE.				Small-pox.	Scarlatina.	Total Cases.
1874.						
4th Quarter	...	...	...	194	—	194
(2nd. Nov. to the end of the year)						
1875.						
1st Quarter	...	...	...	186	—	186
2nd "	...	...	...	169	—	169
3rd "	...	...	...	53	13	66
4th "	...	...	...	12	7	19
Totals	...	...	...	420	20	440
1876.						
1st Quarter	...	...	...	2	1	3
2nd "	...	...	...	2	4	6
3rd "	...	...	...	2	5	7
4th "	...	...	...	5	28	33
Totals	...	...	...	11	38	49
1877.						
1st Quarter	...	...	...	4	20	24
2nd "	...	...	...	19	7	26
3rd "	...	...	...	15	13	28
4th "	...	...	...	—	3	3
Totals	...	...	...	38	43	81
1878.						
1st Quarter	...	...	...	3	13	16
2nd "	...	...	...	4	34	38
3rd "	...	...	...	6	139	145
4th "	...	...	...	7	238	245
Totals	...	...	...	20	424	444
1879.						
1st Quarter	...	...	...	1	60	61
2nd "	...	...	...	—	37	37
3rd "	...	...	...	3	40	43
4th "	...	...	...	—	47	47
Totals	...	...	...	4	184	188

At the

DISINFECTING STATION,

4387 articles have been disinfected, against 6,976 in 1878. The articles comprise—

	1879.		1878.		1877.
Bolsters and Pillows	586	...	899	...	315
Mattresses	339	...	290	...	126
Blankets	241	...	353	...	103
Beds	221	...	466	...	115
Sheets... ..	192	...	424	...	346
Counterpanes	154	...	262	...	68
Other Articles	2,645	...	4,282	...	330
Total	<u>4,378</u>	...	<u>6,976</u>	..	<u>1,403</u>

The same care has been taken to employ Disinfection where necessary as in the previous year, but owing to the diminution of the number of Scarlet Fever cases principally, the amount of work done has much diminished.

The cost of maintaining the establishment during the year is estimated at—

Wages... ..	£135	4	0
Horse-keep, Shoeing, &c.	52	0	0
Gas for heating and lighting	15	2	9
Coal	1	4	9
Water	3	0	0
	<u>£206</u>	<u>11</u>	<u>6</u>

or a few pounds less than last year.

MORTUARIES.

Seventy-one bodies have been taken to the several Mortuaries during the year.

The following are the numbers received at each Mortuary during 1878 and 1879 :—

	1878.	1879.
Moor Street	32	28
Duke Street	10	11
Kenion Street	10	14
Ladywood Road	5	12
Moseley Street	—	6
Totals	<u>57</u>	<u>71</u>

There were only four Mortuaries last year, since when a new one has been opened at Moseley Street, in connection with the Police Station.

WATER SUPPLY.

I have continued to make monthly analyses of the Corporation Water, the results of which show a still further improvement in the quality of the supply.

The water is sometimes turbid, as is commonly the case with such as is either derived from rivers or stored in open reservoirs; any neglect in filtration will account for turbidity, but without such neglect water stored in reservoirs exposed to both air and light will soon present minute vegetable growths, even though it be pumped up from the depths of the earth. The germs of such growth seem to be universally spread about, only awaiting favourable conditions for their development. I have on many occasions examined microscopically these small organisms found in the water, and find them to consist of such as always exist in river water. In order to preserve the purity of water, careful storage in covered reservoirs is necessary, a fact which is becoming pretty generally recognised, indeed it is compulsory to cover every water reservoir within five miles of London. The visible impurities of water are regarded as

the most objectionable simply because they alone as a rule attract notice ; whereas the most dangerous pollutions are not cognisable by the senses, hence a great stir is made by a little innocent vegetable matter suspended in water while the most dangerous abominations, dissolved and therefore imperceptible, excite no alarm and evoke no complaint. Chemical analysis, however, reveals much of the nature of such dissolved and dangerous matters, which are found too often in the well waters of towns. These waters are clear, bright, and cool for the reason that they lie a considerable depth below the surface of the earth, and are unaffected by the solar heat, while they are protected from the light, which, if it gained access, would soon generate low forms of life ; hence such waters remain clear as well as cool, and the noxious ingredients introduced into them from the various sources of impurity which surround all wells in the vicinity of human habitations can only be destroyed by the doubtful process of oxidation. If these clear, cool, but very impure well waters were to be pumped into reservoirs exposed to the light and heat of the sun, they would soon lose their characteristic external properties which so strongly commend them to the casual observer, and would acquire turbidity and other objectionable qualities to a much greater degree than the waters now used as sources of town supply, and the preference for them would soon disappear.

During the year I have analysed 388 samples of well water, taken from different parts of the borough. Out of this number the majority were much polluted with animal matter, doubtless largely consisting of excrementitious filth, more or less clarified and oxidised, but still highly dangerous ; 414 wells have been closed, and in the great majority of instances the owners readily consented to the closure on explanation to them by the Health Sub-Committee of their composition and dangerous character. Very few of the cases demanded, therefore, magisterial interference.

The results of the chemical analysis of the various waters are to be found in Table XV.

PUBLIC BATHS.

From a return supplied to me by Mr. Purnell, Superintendent of Baths, it appears that last year the number of bathers was still lower than in any year except 1874 and 1877. It is probable that the lower temperature of 1879 had much to do with the falling off in numbers.

RETURN OF THE NUMBER OF BATHERS AT EACH OF THE CORPORATION BATHS FOR THE LAST SIX YEARS :—

KENT ST.				WOODCOCK ST.			NORTHWOOD ST.		
	Men.	Women.	Total.	Men.	Women.	Total.	Men.	Women.	Total.
1874	77138	4796	81934	47317	1889	49206	80801	2899	83700
1875	105162	4931	110093	73341	2055	75396	100858	2827	103685
1876	107647	4880	112527	76781	2451	79232	99941	2832	102773
1877	95428	4397	99825	58432	2012	60444	83844	2153	85997
1878	106820	6016	112836	64380	2171	66551	101059	2129	103188
1879	105395	7274	112669	48794	1501	50295	82408	2027	84435

SEWAGE AND REFUSE DISPOSAL.

During the year 1879, $6\frac{1}{2}$ miles of sewers were constructed by the Corporation in streets taken to or through private lands, and 1 mile in streets not taken to. The abolition of the old midden privies is still slowly but gradually taking place, and 3,055 pans have been substituted.

THE PAVING.

The length of streets in the Borough at the end of 1879 was $194\frac{1}{2}$ miles, of which $161\frac{1}{4}$ miles are taken to by the Corporation, to which should be added $20\frac{1}{4}$ miles completed and under their care, though not formally declared highways, leaving 13 miles of undeclared highways to be completed.

The length of sewers constructed in streets taken to or in streets recently completed and underneath private lands is about 172 miles, and about 8 miles in the streets not yet completed. Fourteen miles of carriage-ways are now paved, and $2\frac{1}{4}$ miles on a portion of one of the tramway routes is partly paved and partly macadamised.

I drew attention in my last Annual Report to the reprehensible habit of throwing slops and putrescible matter out of houses on to the street; it is a nuisance and a sanitary evil. The police might do much to mitigate it, but they seem to have effected no improvement in this direction.

SLAUGHTER-HOUSES,

Which are private, now number 280, against 282 in 1878, 278 in 1877 and 1876, and 274 in 1875, so that their number does not vary much from year, and indeed it is desirable on sanitary grounds that any increase should be discouraged. The Markets and Fairs Committee are fully alive to this consideration, and exercise every care in examining into the claims of persons applying for the licensing of new building for slaughtering purposes.

Of the existing Slaughter-houses 155 are licensed and 125 registered. Particulars respecting the seizures of bad meat, fish, &c., and the weight of unwholesome food are given in Table VI., as furnished by Mr. Birkley, Superintendent of Markets.

SANITARY WORK

generally has been carried out with undiminished activity; as many as 15,023 notices have been served on property owners for the abatement of nuisances.

The work effected includes the trapping of 2,595 drains, the disconnection of 1,200 sinks from the drains, the cleansing and whitewashing of 1,125 houses, and the removal of 1,213 accumulations of manure, wash, and other deposits of offensive matter. Nearly 1,200 drains have been opened and cleared from obstruction during the year, 1,903 ashpits and privies repaired, 476 ashpits filled up and privies altered to the pan system, 845 yards or courts wholly or partially paved, and 91 houses reported as unfit for human habitation either closed or, as is generally the case, made habitable. The work done by the limewashers embraces the limewashing of 7,757 privies and of 2,817 courts or back yards.

CANAL BOATS ACT, 1877.

This Act came into operation on the 1st January, 1878, and was put in force in the Borough on the 1st January, 1879.

The objects of it are the prevention, among the canal boat population, of ignorance, immorality, and disease, which are too liable to result from the peculiar conditions accompanying life on canal boats, hence the Local Government Board have made regulations.

1. For the registration of canal boats under this Act, including certificates of registration and the fees in connection with such registration ; and
2. For the lettering, marking, and numbering of such boats ; and
3. For fixing the number, age, and sex of the persons who may be allowed to dwell in a canal boat, having regard to the cubic space, ventilation, provision for the separation of the sexes, general healthiness, and convenience of accommodation of the boat ; and
4. For promoting cleanliness in and providing for the habitable condition of canal boats ; and
5. For preventing the spread of infectious disease by canal boats.

Special provision also is made for the attendance of children at school.

During the year applications have been received for the examination and registration of 295 canal boats, to be used as dwellings under the above Act. The boats have accordingly been duly inspected, and certificates of registration have been granted by the registration authority for 272 of them ; the remaining 23, however, required certain internal alterations in order to place them in conformity with the regulations previous to their registration, and the certificates have been withheld until the required alterations shall have been made.

I am indebted to Mr. Booker, the Inspector of Nuisances, for the principal details in respect to Sanitary Work, and I have pleasure in bearing testimony to the willingness with which, on all occasions, he renders me assistance, indeed it may be said of all the officers that they are animated by the same spirit.

I have the honor to remain,

Mr. Chairman and Gentlemen,

Your obedient servant,

ALFRED HILL, M.D.,

MEDICAL OFFICER OF HEALTH.

TABLE I.
BIRTHS & DEATHS (GROSS NUMBERS).

DATE.	BIRTHS.	DEATHS.
1879.	15,846	8,650
1878.	15,964	9,662
1877.	16,001	9,038
1876.	15,816	8,330
1875.	14,862	9,668
1874.	14,888	9,665
1873.	14,497	8,990
1872.	14,123	8,048
1871.	13,443	8,594
1870.	12,922	7,805
1869.	12,779	7,737
Average of Ten Years, } 1869—1878	14,529	8,753

NOTES.

- 1.—Population at Census, 1871, 343,787.
- 2.—Population, estimated to the middle of the Year 1879, 388,884.
- 3.—Area in Acres, 8,400.
- 4.—Number of Inhabited Houses in Borough at Census 1871, 68,532.
- 5.—Average number of Persons in each House at Census 1871, 5·0.

TABLE II.

ANNUAL RATE OF MORTALITY, DEATH RATE AMONG CHILDREN, AND DEATHS IN PUBLIC INSTITUTIONS.

DATE.	Annual rate of Mortality per 1,000 living.	Deaths of Children under 1 year : percentage to total Deaths.	Percentage of Deaths of Children under 1 year to Registered Births.	Deaths of Children under 5 years ; percentage to total Deaths.	Percentage of Deaths in Public Institutions.
1879	21.8	27.5	15.0	49.7	14.1
1878	25.2	28.6	17.0	53.1	11.8
1877	23.9	29.1	16.4	49.4	12.2
1876	22.4	30.5	16.0	46.6	11.6
1875	26.3	30.6	19.6	49.4	11.8
1874	26.8	27.8	17.8	47.5	11.8
1873	24.8	29.2	18.1	49.2	11.6
1872	23.1	29.1	16.6		12.0
1871	24.9	29.7	19.0		10.9
1870	23.0	29.9	18.1		11.4
1869	23.1				
Average of 10 Years 1869—1878	24.3				

TABLE IV.

Mortality from certain classes of Diseases, and proportions to population and to 1,000 deaths in 1879 :—

CLASS OF DISEASES.	Total Deaths.	Death Rate per 1,000 of the population.	Proportion of Deaths to 1,000 Deaths.
1.—Seven principal Zymotic Diseases	1,251	3·2	145
2.—Pulmonary (other than Phthisis)	2,021	5·2	221
3.—Tubercular 	905	2·3	105
4.—Wasting Diseases of Infants ...	787	2·0	91
5.—Convulsive Diseases of Infants...	769	2·0	89

NOTES.

1.—Includes Small-pox, Measles, Searlet Fever, Diphtheria, Whooping Cough, Fever, and Diarrhœa.

3.—Includes Phthisis, Scrofula, Rickets, and Tabes.

4.—Includes Marasmus, Atrophy, Debility, Want of Breast Milk, and Premature Birth.

5.—Includes Hydrocephalus, Infantile Meningitis, Convulsion, and Teething.

TABLE V.
SHOWING THE NUMBER OF DEATHS IN THE FIVE YEARS, 1874 TO 1878, FROM THE SEVEN PRINCIPAL ZYMOTIC DISEASES,
AND THE NUMBER IN 1879.

	1874	1875	1876	1877	1878	Annual average of 5 years, 1874—1878.	Proportion of deaths to 1,000 deaths in 5 years, 1874—1878.	1879	Proportion of Deaths to 1,000 Deaths in 1879.
Small-pox ...	637	174	0	8	5	165	17·8	0	0·0
Measles ...	139	141	87	309	54	146	15·7	169	19·5
Scarlet Fever ...	737	265	204	237	995	488	52·6	306	35·4
Diphtheria ...	74	55	58	52	83	65	7·0	71	8·2
Whooping Cough ...	242	438	189	369	455	338	36·5	384	44·4
Fever ...	201	204	147	144	147	169	18·2	87	10·1
Diarrhoea ...	622	868	651	457	682	656	70·8	234	27·0
TOTAL ...	2,652	2,145	1,336	1,576	2,421	2,027	218·6	1,251	144·6
London ...	11,230	13,411	12,565	10,292	14,734	12,446	157·1	12,216	142·8

TABLE VI.

YEAR ENDING DECEMBER 29TH, 1879.

SUMMARY OF NUISANCES AND OTHER MATTERS REPORTED AND WORK ACCOMPLISHED BY THE OFFICERS AND MEN EMPLOYED DURING THE YEAR ENDED DEC. 31ST, 1879.

(Reported by Mr. Booker, Inspector of Nuisances.)

	Work Reported.	Work Done.
Nuisances remaining on the Books 31st December, 1878...	1,934 ...	
Defective Drains requiring opening and clearing from Obstruction... ..	1,444 ...	1,167
" Drains not efficiently Trapped... ..	2,823 ...	2,595
" Sink Drains requiring Disconnection from the Sewer	1,143 ...	1,029
" Spout Drains	351 ...	335
Nuisances arising from the want of drains	166 ...	247
" " " the want of an efficient supply of wholesome water	91 ...	86
" " " keeping of fowls	435 ...	445
" " " water in cellars	195 ...	195
" " " foul and defective urinals	489 ...	425
" " " the overcrowding of houses	32 ...	35
" " " the want of efficient ventilation	58 ...	51
Houses reported unfit for human habitation	25 ...	91
Houses disinfected by the Inspectors where Zymotic disease has occurred	683 ..	739
Filthy houses requiring cleansing and whitewashing ...	1,238 ...	1,125
Accumulations of wash, deposit of offensive matter, manure, &c.	1,234 ...	1,213
Swine and Swine Styes so kept as to be a nuisance ...	159 ...	151
Foul Ashpits and Privies requiring repairs	1,705 ...	1,903
Houses where Privies and Ashpits belonging thereto are so foul and defective as to require re-construction ...	742 ...	476
Back Yards requiring paving	901 ...	845
Number of Privies limewashed by our own men	7,358 ...	7,757
" Courts or Back Yards "	2,734 ...	2,817
" Cases still on the books under Notice		2,215
MISCELLANEOUS—Premises in such a state as to be a nuisance arising from the filthy condition of the Privies, &c.	193 ...	191
Total	<u>26,133 ...</u>	<u>26,133</u>
Number of Notices issued for the abatement of Nuisances during the year ended 31st December, 1879 ... ..	...	15,023
Number of cases dealt with by the Magistrates ... ..	...	103
Amount of Fines	£17 0 0	
" Costs	24 19 3	
	<u>£41 19 3</u>	

TABLE VI.—*Continued.*

WELL WATERS.

No. of Well Waters submitted by the Inspector for analysis...	...	386
No. of Wells reported as polluted ... ..	...	386
No. of Wells closed ... ..	...	414
No. of Premises supplied with Tap Water ... ..	...	381
No. of Persons dealt with by the Magistrates...	...	126
Amount of Costs	£6 11 9	

COMMON LODGING HOUSES.

Houses Registered	105
Number of Lodgers allowed in the Houses	2,260
Number of Visits by Day	10,576
" " Night	3,125

HOUSES LET IN LODGINGS.

Houses Registered	190
No. of Lodgers allowed in the Houses	1,094

SMOKE NUISANCES.

No. of registered Proprietors of furnaces or fireplaces used for manufacturing purposes	1,126
No. of Chimneys	1,503
No. of Notices served for the abatement of Nuisances	431
No. of Observations made by the Smoke Inspectors	11,283
No. of Manufacturers reported for the emission of dense smoke	389
No. Cautioned	238
No. Summoned... ..	151
No. excused by the Magistrates	16
No. Convicted	13
Amount of Penalties	£92 0 0
" Costs	54 0 6

SLAUGHTER-HOUSES.

No. of Slaughter-Houses	280
No. of Visits	12,072
Seizures of Bad Meat	312
Weight destroyed	79,321lbs.
Seizures of Fish, &c.	76

From DECEMBER 29th, 1878, to JANUARY 3rd, 1880.

Tot

ESTIMATED POPULATION OF THE BOROUGH IN THE
MIDDLE OF THE YEAR 1879—388,984.

SEX													AGES.													ESTIMATED POPULATION OF EACH OF THE REGISTRAR'S SUB-DISTRICTS													THE DEDUCTION OF												
TOTAL.																																																			

DEATHS REGISTERED IN THE BOROUGH OF BIRMINGHAM,

During the Quarter ending JUNE 28th, 1879.

ESTIMATED POPULATION OF THE BOROUGH IN THE
MIDDLE OF THE YEAR 1870—388,884.

[illegible]

ESTIMATED POPULATION OF THE BOROUGH IN THE
MIDDLE OF THE YEAR 1879—388,894.

ESTIMATED POPULATION OF THE BOROUGH IN THE
MIDDLE OF THE YEAR 1879—388,894.

During the Quarter ending SEPTEMBER 27th, 1879.

Total



During the Quarter ending JANUARY 3rd, 1880.

ESTIMATED POPULATION OF THE BOROUGH IN THE
MIDDLE OF THE YEAR 1879—33,824.

[illegible]



TABLE XII.

METEOROLOGICAL CONDITION OF THE AIR, AND AMOUNT OF RAINFALL FOR
THE YEAR ENDING JANUARY 3RD, 1880.

Observed at 63, Bloomsbury Street, Birmingham, at 8.0 a.m., by
D. SMITH, Esq., F.R.A.S.

The Instruments are considered to be 340 feet above the mean level of the sea.

From the returns of the Registrar-General, the area within the Municipal Boundary of the Borough of Birmingham is taken at 8,400 acres, and the population estimated to the middle of the year 1879, at 388,884.

1879. Months.	Pressure of Air.	TEMPERATURE OF THE AIR				RAINFALL. Gauge 8 inches diameter. Receiving surface 8 inches above the ground.		
	Barometer	Reading of Thermometer.				Depth of Rain depo- sited upon a square foot of sur- face, in inches and parts.	Measure- ment converted into weight per Acre.	Number of Days on which Rain fell, when $\frac{1}{160}$ ths of an inch or more was measured.
	Mean Monthly Reading (corrected and reduced to 32 degrees Fahrenheit)	Highest in Shade.	Lowest in Shade.	Range of Temp- erature in the Month.	Mean Tempe- rature in the Month.			
	In Parts.	Dg. Prts.	Dg. Prts.	Dg. Prts.	Dg. Prts.	In. Parts.	Tons.	
Jan.	29·586	52°·8	20°·0	32 °8	32°·4	2·01	203	10
Feb.	29·196	55·0	22·2	32·8	38·5	3·68	371	18
Mar.	29·616	63·2	28·2	35·0	40·7	0·95	96	9
April ...	29·361	61·0	28·0	33·0	43·6	3·39	342	16
May	29·595	68·0	30·6	37·4	50·1	4·26	430	13
June	29·366	71·5	41·0	30·5	56·0	6·16	662	19
July	29·414	77·0	47·8	29·2	59·0	3·97	400	18
Aug.	29·388	81·3	47·2	34·1	60·1	5·72	577	13
Sept.	29·563	72·0	41·2	30·8	55·6	3·59	363	12
Oct.	29·736	70·3	31·8	38·5	49·6	2·06	208	9
Nov.	29·862	55·0	24·2	30·8	40·9	1·98	201	12
Dec.	29·878	56·3	10·5	45·8	35·3	1·07	108	5



RAINFALL AND TEMPERATURE IN EACH MONTH AND YEAR FROM 1869 TO 1879.

COMPILED FROM OBSERVATIONS MADE AT 63, BLOOMSBURY STREET, BIRMINGHAM, BY D. SMITH, ESQ., F.R.A.S.

MONTH.	1869.			1870.			1871.			1872.			1873.			1874.			1875.			1876.			1877.			1878.			Average for 10 years 1869-78.			1879.		
	Rainfall.	No. of days on which 6-faths of an inch or more was measured.	Temperature.	Rainfall.	No. of days on which 6-faths of an inch or more was measured.	Temperature.	Rainfall.	No. of days on which 6-faths of an inch or more was measured.	Temperature.	Rainfall.	No. of days on which 6-faths of an inch or more was measured.	Temperature.	Rainfall.	No. of days on which 6-faths of an inch or more was measured.	Temperature.	Rainfall.	No. of days on which 6-faths of an inch or more was measured.	Temperature.	Rainfall.	No. of days on which 6-faths of an inch or more was measured.	Temperature.	Rainfall.	No. of days on which 6-faths of an inch or more was measured.	Temperature.	Rainfall.	No. of days on which 6-faths of an inch or more was measured.	Temperature.	Rainfall.	No. of days on which 6-faths of an inch or more was measured.	Temperature.	Rainfall.	No. of days on which 6-faths of an inch or more was measured.				
January ...	3.480	12	41.6	2.235	13	38.0	1.485	9	32.5	4.750	21	40.4	4.48	19	41.4	1.86	10	41.4	3.12	16	44.4	1.75	6	36.1	4.47	18	42.8	1.98	11	43.2	2.95	13	40.4	2.01	10	32.4
February...	8.075	13	45.3	2.300	10	38.0	1.730	9	42.5	3.410	15	43.8	1.76	11	35.1	2.685	9	38.2	1.675	10	36.0	2.55	14	39.6	2.43	12	44.5	1.11	8	40.1	2.27	11	40.1	3.68	13	33.6
March ...	2.500	9	38.2	1.680	8	40.6	1.240	8	44.1	2.365	12	44.0	2.66	14	39.9	1.72	16	44.6	0.81	5	40.7	3.16	22	40.8	2.72	15	40.8	1.17	9	43.6	2.01	12	43.5	0.95	9	40.7
April ...	1.825	8	49.8	0.915	5	49.1	3.850	10	47.6	3.925	10	47.6	0.77	7	46.6	1.45	5	50.5	1.09	7	47.2	1.98	13	47.5	2.82	12	45.0	2.17	11	43.3	2.06	9	47.1	3.39	16	43.6
May ...	5.745	17	60.2	1.300	7	53.9	2.165	7	53.6	2.265	11	49.3	2.545	12	50.6	3.24	7	50.5	2.10	12	54.8	1.00	6	48.1	2.27	9	43.2	5.33	21	54.7	2.77	10	51.3	4.26	13	60.1
June ...	1.210	7	56.4	0.786	4	80.7	3.005	11	54.7	5.770	16	58.3	1.65	9	68.2	1.13	6	58.5	3.915	15	58.0	2.23	8	68.0	2.96	10	69.0	3.37	14	60.8	2.70	10	63.3	6.18	19	66.0
July...	0.580	2	83.6	1.270	5	84.2	4.550	17	59.5	3.565	11	65.0	6.16	11	62.3	1.26	8	64.0	8.14	13	58.9	1.42	6	63.7	5.03	12	59.8	0.93	7	63.7	3.20	9	61.7	3.97	18	69.0
August ...	1.260	8	60.8	1.720	6	61.0	2.180	8	61.7	3.810	10	80.3	3.435	18	81.1	1.985	14	60.1	1.80	7	62.0	1.22	5	62.7	2.29	10	61.6	6.44	18	62.0	2.61	10	81.3	5.72	13	60.1
September	4.105	13	58.2	0.800	7	55.4	6.010	11	55.5	2.645	8	57.0	2.13	8	53.4	4.545	19	56.4	3.89	14	59.3	5.83	21	55.7	4.68	13	54.9	3.15	13	56.9	3.34	13	56.3	3.59	12	55.8
October ...	1.660	8	49.8	8.215	16	50.5	1.955	12	49.6	4.650	19	47.1	1.86	9	47.8	2.71	12	61.2	7.21	16	47.4	2.26	9	53.0	1.91	12	49.1	3.66	16	52.2	3.36	12	49.7	2.06	9	49.6
November	2.035	9	44.3	2.195	11	40.7	0.835	4	37.7	3.475	18	44.3	1.83	10	43.0	1.46	10	41.6	3.31	10	41.9	2.94	8	43.4	2.87	16	47.4	3.15	11	39.4	2.41	10	42.4	1.93	12	40.3
December	4.005	13	36.5	2.205	13	32.8	1.615	9	39.0	4.505	17	41.1	0.975	5	41.3	4.875	16	33.9	1.45	10	39.1	6.68	19	42.9	2.40	11	41.3	2.44	11	31.2	2.85	13	37.9	1.07	5	36.3
YEAR ..	31.460	119	49.3	23.650	102	48.6	30.620	113	49.0	45.135	167	49.8	29.255	133	48.8	28.41	131	49.0	38.51	135	49.1	32.02	136	49.4	36.75	149	49.1	34.93	150	49.6	33.03	132	49.2	33.84	164	46.8

TABLE XIV.

NEW CASES OF DISEASE COMING UNDER TREATMENT DURING THE YEAR
1879, AT THE FOLLOWING INSTITUTIONS, &c.

DISEASES.	I. General Hospital.	II. General Dispensary	III. Queen's Hospital.	IV. Children's Hospital.	V. The Work- house.	VI. Out-door Pauper Patients.	VII. Borough Hospital.	TOTAL.
Small Pox .....	...	...	...	...	...	3	4	7
Measles	41	18	2	46	77	161	...	345
Scarlet fever	27	61	6	115	...	73	184	466
Diphtheria	5	8	14	33	6	1	...	67
Whooping Cough.....	22	61	4	945	33	165	...	1230
Croup	3	1	1	5	6	2	...	18
Diarrhœa	481	55	162	1131	118	299	...	2246
Dysentery.....	5	5	2	5	1	...	...	18
Asiatic Cholera.....	...	...	...	...	...	...	...	...
Erysipelas.....	28	14	25	15	8	16	...	106
Continued Fever.....	1	...	1	...	...	...	..	2
Typhus.....	...	...	...	...	...	...	...	...
Typhoid.....	16	30	19	16	5	4	...	90
Relapsing.....	...	...	...	...	..	...	...	...
Febricula	8	12	24	241	16	338	...	639
Ague	8	3	...	...	...	1	...	12
Rheumatic Fever.....	43	33	60	5	...	93	...	234
Puerperal Fever .....	..	...	...	...	...	...	...	...
Bronchitis & Catarrh	861	2502	697	3166	746	2543	...	10515
Influenza	1	...	4	...	...	...	...	5
Pleurisy & Pneumonia	88	111	108	80	44	61	...	492
Phthisis.....	333	2158	322	149	182	141	...	3285
Constl. Syphilis	334	255	411	380	386	31	...	1797
All other Diseases ...	9666	12143	6919	8811	3129	4474	...	45142
Accidents.....	9350	227	5563	23	156	11	...	15330
Totals.....	21,321	17,697	14,344	15,166	4,913	8,417	188	82,046

The above returns are made by (I.) Howard G. Lowe, Esq., M.R.C.S.; (II.) Arthur O. Holbeche, J. M. Taylor, and F. C. P. Howes, Esqrs.; (III.) John Wood, Esq., B.A.M.B., and W. H. Osborn, Esq.; (IV.) W. Rhodes, Esq., M.R.C.S., and Dr. A. E. Clark; (V.) A. B. Simpson, Esq.; (VI.) W. G. Coulton, Esq., Clerk to the Guardians; (VII.) Wm. Bates, Esq., B.A., Surgeon to the Borough Hospital.

TABLE XV.—WATER: RESULTS OF ANALYSIS

Date of Receipt of Sample.	DESCRIPTION.	Temp. C.	Total solid Impurity.	Organic Carbon.	Organic Nitrogen.
CORPORATION WATER.					
1879.					
Jan. 24th	15 and 16, Mill Lane ...	2°·8	24·24	·187	·058
Feb. 18th	10 Court, Great Lister Street ..	5°·0	22·00	·241	·054
Mar. 13th	8 Court, Weaman Street ...	5°·5	24·40	·186	·045
April 18th	15 Court, Edgbaston Street ...	6°·6	27·80	·122	·019
May 12th	39, Cambridge Street... ..	5°·0	25·00	·113	·022
June 12th	5 Court, Barn Street ...	14°·4	22·36	·245	·047
July 14th	2 Court, Miles Street... ..	11°·7	24·18	·244	·031
Aug. 7th	65, Steelhouse Lane ...	12°·2	24·50	·311	·032
Sept. 12th	31 Court, Charles Henry Street ...	11°·5	31·74	·278	·030
Oct. 13th	7 Court, Water Street ...	12°·2	25·78	·197	·034
Nov. 5th	Back 5, Wrottesley Street ...	6°·1	23·30	·329	·078
Dec. 18th	Average of three samples ...	5°·3	30·84	·132	·036
	Average results, 1879 ...	8°·2	25·34	·215	·040
	" " 1878 ...	10°·8	26·75	·220	·050
	" " 1877 ...	10°·9	25·14	·279	·051
	" " 1876 ...	10°·0	25·13	·266	·063
	" " 1875 ...	9°·8	27·70	·285	·082
WELL WATERS.					
Jan. 1st	46—49, Johnson Street ...	...	161·4	...	...
" "	41—45, Johnson Street ...	...	156·0	...	...
" "	29 and 30, Turner St. (Scarlet Fever) ...	...	98·4	...	...
" "	33 and 34, Turner St. (Scarlet Fever) ...	...	104·0	...	...
" "	Bella Place, Turner St. (Scarlet Fever) ...	...	93·0	...	very large
" "	Twist's Premises, Auckland Road (Diphtheria) ...	...	55·4	...	"
" 9th	47 & 48, Stratford Rd. (Scarlet Fever) ...	...	82·4	...	...
" "	18 & 19, Tillingham St. (Diphtheria) ..	...	110·0	...	...
" "	2—4, Lilly Green (Scarlet Fever) ...	...	266·0	...	...
" "	2 Court, Lower Dartmouth Street ...	...	215·0	...	very large
" "	Bailey's Buildings, Belmont Passage... ..	...	312·0	...	"
" 14th	195 & 196, Bolton Road (Scarlet Fever) ...	...	74·4	...	"
" "	Twist's Premises, Auckland Road (Diphtheria) ...	...	43·0	...	"
" "	24, Phillips Street (Whooping Cough) ...	...	90·0	...	"
" "	193 and 195, Golden Hillock Road (Diphtheria) ...	...	401·4	...	...
" "	61—64, Ladypool Lane (Diarrhœa) ...	...	163·0	...	very large
" 16th	36—38, Summer Hill (Scarlet Fever) ...	...	153·4	...	...
" "	3 and 4, Hope Street... ..	...	231·0	...	...
" "	359 and 360, Park Road (Typhoid) ...	...	62·0	...	...
" "	463 and 464, Park Road (Diarrhœa) ...	...	97·4	...	...
" "	107 & 108, Carver St. (Scarlet Fever) ...	...	147·4	...	...
" "	137 and 138, Farm Street ...	...	62·0	...	...
Feb. 6th	283 & 284, Great Colmore St. (Typhoid) ...	...	128·2	...	...
" "	4 Court, Villa Street ...	...	37·0	...	...
" 7th	5 Court, Villa Street... ..	...	130·0	...	...
" "	34 and 35 Courts, New John Street West (Typhoid) ...	...	79·0	...	very large
" "	54, Gough Road ...	...	132·0	...	"

EXPRESSED IN PARTS PER 100,000.

Ammonia	Nitrogen as Nitrates and Nitrites.	Total Combined Nitrogen.	Previous Sewage or Animal Contam- ination (Estimated)	Chlorine.	Hardness.			REMARKS
					Tempor- ary.	Perman- ent.	Total.	
·007	·275	·339	2490	1·6	9°·8	8°·1	17°·9	Clear, with a few minute floating particles
·004	·220	·277	1910	1·5	8°·6	7°·3	15°·9	Clear
·004	·297	·345	2680	2·1	5°·7	6°·7	12°·4	Clear, a few suspended particles
·004	·154	·176	1250	1·6	6°·1	8°·5	14°·6	Clear
·005	·209	·235	1810	1·9	7°·3	6°·7	14°·0	Clear
·004	·165	·215	1360	1·6	9°·5	4°·7	14°·2	Clear
·004	·275	·309	2460	2·1	8°·7	4°·4	13°·1	Clear
·005	·220	·256	1920	2·0	7°·4	7°·3	14°·7	Clear
·002	·253	·284	2220	1·7	12°·6	5°·8	18°·4	Clear
·002	·264	·299	2330	1·9	7°·5	8°·7	16°·2	Clear, a few particles Slightly turbid, greenish
·002	·220	·299	1890	1·5	5°·3	8°·7	14°·0	
·003	·286	·324	2560	1·8	18°·7	4°·1	22°·8	
·004	·236	·279	2070	1·77	8°·9	6°·7	15°·6	
·003	·217	·269	1870	1·78	9°·2	8°·2	17°·4	
·002	·261	·313	1690	1·65	7°·2	8°·3	15°·5	
·002	·230	·295	1990	1·71	6°·3	10°·2	16°·5	
·0025	·166	·250	1420	1·78	6°·9	12°·5	19°·4	
·090	4·95	5·024	49920	12·8	...	...	...	Clear
·075	7·92	7·982	79500	7·0	...	...	...	Clear
·016	1·98	1·993	19610	5·2	...	...	...	Clear
·020	5·53	2·546	25140	7·1	...	...	...	Clear
·006	·99	·995	9630	4·9	...	...	...	Clear
·010	·22	·228	1960	2·6	...	...	...	Clear
·120	1·43	1·529	14970	13·3	...	...	...	Clear
·160	1·87	2·001	19790	8·8	...	...	...	Clear
·090	5·50	5·574	55420	35·5	...	...	...	Clear
·005	8·25	8·254	82320	24·0	...	...	...	Clear
·004	8·80	8·803	87710	26·8	...	...	...	Clear
·005	1·10	1·104	10720	3·9	...	...	...	Clear
·011	·44	·449	4170	2·1	...	...	...	Clear
·006	2·86	2·865	28330	10·9	...	...	...	Clear
·150	2·20	2·323	22910	7·1	...	...	...	Clear
·005	3·96	3·964	39320	16·4	...	...	...	Clear
·035	7·15	7·179	71470	15·2	...	...	...	Clear
·040	3·74	3·773	37410	43·1	...	...	...	Clear
·075	2·75	2·812	27800	5·5	...	...	...	Clear
·030	4·95	4·975	49430	11·5	...	...	...	Clear
·015	8·03	8·042	80100	19·8	...	...	...	Clear
·020	1·91	1·996	19640	2·9	...	...	...	Clear
·028	6·71	6·933	69010	13·1	...	...	...	Clear
·075	·55	·611	5800	1·6	...	...	...	Clear
1·020	1·76	2·599	25670	12·1	...	...	...	Clear
·008	2·20	2·206	21740	3·3	...	...	...	Clear
·004	5·50	5·503	54710	11·2	...	...	...	Clear

TABLE—XV.

Date of Receipt of Sample.	DESCRIPTION.	Temp. C.	Total solid Impurity.	Organic Carbon.	Organic Nitrogen.
1879.	WELL WATERS—(continued.)				
Feb. 7th	1 Court, Ryland Road (Diphtheria) ...	...	128·0	...	very large
" 10th	Back 7, Kent Street ...	...	198·0	...	"
" "	7 and 8, Handsworth New Road ...	...	96·0	...	"
" "	2 Court, Greenway Street (Scarlet Fever) ...	...	142·0	...	...
" "	183, Coventry Road ...	...	106·0	...	very large
" "	Back 11, Mole Street (Typhoid) ...	...	157·0	...	...
" "	60 and 61, Stratford Road ...	...	160·0	...	very large
" 13th	62 and 63, Stratford Road (Typhoid)..	...	164·0	...	...
" "	64, Stratford Road ...	...	127·0	...	...
" "	8 and 9, Hope Street... ..	...	54·0	...	very large
" "	5 and 6, Rocky Lane (Scarlet Fever)... ..	...	56·0	...	"
" "	Back 58, Saltley Road (Typhoid) ...	...	76·0	...	"
" "	130 and 131, Farm Street ...	...	140·0	...	"
" 17th	8 Court, Arthur St. (1st pump) (Scarlet Fever) ...	...	51·0	...	very large
" "	8 Court, Arthur St. (2nd pump) (Scarlet Fever) ...	...	58·0	...	"
" "	46 and 47, Herbert Rd. (Scarlet Fever) ...	...	128·0	...	excessive
" "	Back 178, Bordesley Park Road (Scarlet Fever) ...	...	98·0	...	"
" "	17 Court, Irving Street ...	...	99·0	...	"
" "	10 and 11, Kelynge Street ...	...	100·0	...	...
" 20th	Back 27 and 28, Kyrwicks Lane ...	...	136·0	...	excessive
" "	19 and 20, Priestley Road (Typhoid)..	...	113·0	...	"
" "	9 Court, Coleman Street (Typhoid) ...	...	278·0	...	...
" "	47 and 48, Larches St. (Scarlet Fever) ...	...	171·0	...	large
" "	82—86, Marshall Street South (Scarlet Fever) ...	...	159·0	...	very large
" "	19, Main Street ...	...	146·0	...	"
" 25th	81 and 82, Stratford Road ...	...	11·0	...	...
" "	16—21, Kyrwicks Lane ...	...	176·0	...	excessive
" "	28, Highgate Place, and 24, Kyrwick's Lane ...	...	140·0	...	"
" "	10 Court, Geach Street ...	...	324·0	...	...
" "	303, Pershore Road ...	...	72·0	...	large
" "	Williamson's Bldgs, Turner Street, and Marshall Street South (Diphtheria). ...	...	90·0	...	excessive
" 29th	86—89, Long Acre (Typhoid) ...	...	136·0	...	...
" "	236 and 237, Nechells Park Road ...	...	88·0	...	large
" "	5, Edgbaston Road ...	...	62·0	...	very large
" "	148—151, Hope Street (Scarlet Fever) ...	...	240·0	...	"
" "	93 and 94, Bath Row (Scarlet Fever)..	...	143·0	...	...
" "	20 Court, Lee Bank Rd. (Scarlet Fever) ...	...	111·0	...	...
Mar. 5th	345—350, Nechells Park Road ...	...	64·0	...	very large
" "	12 Court, Geach Street ...	...	108·0	...	"
" "	89 and 89½, Digbeth... ..	...	282·0	...	very large
" "	Johnson's Buildings, Garden Walk, Long Acre (Typhoid) ...	...	126·0	...	large
" "	23 Court, Cregoe Street ...	...	116·0	...	"
" "	44 and 45, Hatchett St. (Scarlet Fever) ...	...	192·0	...	"
" 12th	56, Lee Crescent ...	...	84·0	...	large
" "	256, Garrison Lane ...	...	270·0	...	very large
" "	17—20, Bow Street ...	...	160·0	...	"
" "	1 Court, Coventry Rd. (Scarlet Fever) ...	...	120·0	...	"

(continued).

Ammonia	Nitrogen as Nitrates and Nitrites.	Total Combined Nitrogen.	Previous Sewage or Animal Contam- ination. (Estimated)	Chlorine.	Hardness.			REMARKS.
					Tempor- ary.	Perman- ent.	Total.	
·016	4·40	4·413	43810	12·1	...	...	...	Clear
·006	7·15	7·155	71230	26·0	...	...	...	Clear
·008	4·62	4·626	45940	9·9	...	...	...	Clear
·027	3·08	3·102	30700	13·1	...	...	...
·004	3·96	3·963	39310	10·6	..	...	...	Clear
·018	5·17	5·183	51539	10·9	...	...	...	Clear
·005	6·60	6·604	59720	18·8	...	...	...	Clear
·050	4·18	4·22	41890	16·0	...	...	...	Clear
3·900	0·44	3·65	36180	17·8	...	...	...	Turbid residue brown
·011	·55	·559	5270	7·7	...	...	...	Clear
·007	1·32	1·326	12940	5·3	...	...	...	Clear
·003	3·85	3·852	38200	6·6	...	..	...	Clear
·004	4·29	4·293	42610	10·2	...	...	...	Clear
·005	·99	·994	9620	2·8	...	..	...	Clear; many suspended particles.
·006	1·10	1·105	10730	3·6	...	...	...	Clear; many suspended particles.
·005	6·38	6·384	63520	9·9	...	...	...	Clear
·005	2·75	2·754	27220	5·5	...	...	...	Clear
·006	3·08	3·085	30530	13·5	...	...	...	Turbid
·095	4·18	4·259	42270	12·5	...	...	...	Clear
·005	3·41	3·414	33820	9·8	...	...	...	Clear
·004	3·30	3·303	32710	6·0	...	...	...	Clear
·040	13·42	13·435	134210	35·5	...	...	...	Clear
·005	5·50	5·504	54720	13·9	...	...	...	Clear
·004	4·07	4·073	40410	9·8	...	...	...	Clear
·005	3·85	3·854	38220	13·2	...	...	...	Clear
1·350	4·40	5·511	54890	8·8	...	...	...	Clear
·006	3·52	3·525	34930	16·4	...	...	...	Clear
·008	3·41	3·416	33840	13·0	...	...	...	Clear
2·700	11·00	13·224	131930	32·1	...	...	...	Clear
·013	·22	·231	1990	4·7	...	...	...	Clear
·006	1·32	1·325	12930	4·5	...	...	...	Clear
1·450	3·85	5·044	50120	11·8	...	...	...	Clear
0·10	5·50	5·508	54760	4·2	...	...	...	Clear
·007	·66	·666	6340	3·5	...	...	...	Clear, brown, said to smell badly at times.
·900	2·75	·349	34580	32·2	...	...	...	Clear
·120	·77	·868	8360	38·8	...	...	...	Clear
·007	4·73	4·736	47040	13·3	...	...	...	Clear
·006	1·65	1·655	16230	4·3	...	...	...	Clear
·090	2·97	3·044	30120	17·0	...	...	...	Clear
·002	·55	5·501	54690	60·5	...	...	...	Clear
·010	4·51	4·518	44860	10·5	...	...	...	Clear
·004	4·95	4·953	49210	19·6	...	...	...	Clear
·005	8·69	8·694	86620	31·9	...	...	...	Clear
·005	3·33	3·304	32720	7·5	...	...	...	Clear
·005	5·39	5·394	53620	28·3	...	...	...	Clear
·006	6·27	6·275	62430	16·9	...	...	...	Clear
·005	2·20	2·204	21720	17·5	...	...	...	Clear

TABLE XV.—

Date of Receipt of Sample.	DESCRIPTION.	Temp. C.	Total solid Impurity.	Organic Carbon.	Organic Nitrogen.
1879.	WELL WATERS—(continued).				
Mar. 12th	53, Cheapside... ..	...	295·0	...	...
" "	12 Court, Bartholomew Street ...	...	228·0	...	...
" 19th	198 & 199, Green Lane (Scarlet Fever)	...	60·0	...	very large
" "	43—46, Bordesley Green ...	...	124·0	...	excessive.
" "	104 and 105, Muntz Street ...	...	136·0	...	...
" "	119, Muntz Street ...	...	107·0	...	large
" "	16 Court, Angelina St. (Scarlet Fever)	...	89·0	...	very large
" "	Paradise Place, Angelina Street (Scarlet Fever)	...	243·0	...	"
April 1st	180 and 181, Stratford Road ...	...	106·0	...	...
" "	14 and 15, Warwick Street ...	...	144·0	...	large
" "	13 Court, Vaughton Street ...	...	169·0	...	very large
" "	12 Court, Suffolk Street ...	...	82·0	...	large
" "	18—22, Mount Street, Deritend ...	...	221·0	...	"
" "	44—46, New Canal St. (Scarlet Fever)	...	210·0	...	very large
" "	44 and 45, Alcester Street ...	...	279·0	...	"
" 4th	12 Dwellings, Frank Street ...	...	164·0	...	"
" "	11 and 12, Victoria Grove, Benacre St.	...	182·0	...	"
" "	21 and 22, Benacre Street, and 19, Victoria Grove, Benacre Street ...	...	208·0	...	...
" "	93—101, Angelina Street ...	...	130·0	...	rather large
" "	36—38, Dymoke street (Scarlet Fever)	...	129·0	...	large
" "	146—154, Emily Street ...	...	97·0	...	"
" 9th	7 Court, Benacre Street ..	...	153·0	...	...
" "	117 and 118, Benacre Street...	...	143·0	...	...
" "	21—23, St. Luke's Road ...	...	182·0	...	very large
" "	14 Court, Lower Essex Street ...	...	277·0	...	"
" "	12 and 13, Oliver Road ...	...	117·0	...	...
" "	16, Oliver Road ...	...	78·0	...	...
" 16th	House occupied by Baker, Toy's Bldgs., Bacchus Road (Diphtheria) ...	...	40·0	...	excessive
" "	House occupied by Abel, Toy's Bldgs., Bacchus Road (Diphtheria) ...	...	40·0	...	"
" "	3 Court, Lee Bank Rd. (Scarlet Fever)	...	42·0	...	large
" "	24 Court, Lee Bank Road ...	...	188·0	...	"
" "	8 Court, Ryland Road (Scarlet Fever)	...	101·0	...	"
" "	9 and 10, Upper Ryland Road ...	...	116·0	...	"
" 21st	9, Bordesley Street ...	...	333·0	...	...
" "	63 and 64, Albert Street, Smallheath (Scarlet Fever) ...	...	144·0	...	...
" "	55—57, Allison Street ...	...	216·0	...	...
" "	1 & 2, Bishop's Bldgs., Hobmoor Lane ...	...	62·0	...	very large
" "	3 & 4, Bishop's Bldgs., Hobmoor Lane ...	...	71·0	...	"
" "	7 & 8, Bishop's Bldgs., Hobmoor Lane ...	...	63·0	...	"
" "	13 and 14, Reservoir Retreat (Typhoid)	...	60·0	...	"
" 28th	Harold Place, Summer Road (Scarlet Fever) ...	...	95·0	...	"
" "	Portland Terrace, Friston Street (Scarlet Fever)	...	60·0	...	"
" "	130 and 131, Summer Lane ...	...	398·0	...	"
" "	10 Court, Blews Street ...	...	190·0	...	...
" "	5 and 6, Pershore Road ..	...	128·0	...	...
May 2nd	10 and 11, Spring Road ...	...	100·0	...	large

(continued.)

Ammonia	Nitrogen as Nitrates and Nitrites	Total Combined Nitrogen	Previous Sewage or Animal Contam- ination (Estimated)	Chlorine.	Hardness.			REMARKS.
					Tempor- ary.	Perman- ent.	Total.	
2.250	2.64	4.493	44610	48.8	...	...	...	Clear
.650	10.01	10.545	105130	27.8	...	...	...	Clear
.016	.99	1.003	9710	3.9	...	...	...	Clear
.005	2.20	2.204	21720	11.0	...	...	...	Clear
.035	4.62	4.649	46170	12.8	...	...	...	Clear
.004	2.09	2.093	20610	4.8	...	...	...	Clear
.007	.66	.666	6340	4.3	...	...	...	Clear
.003	.88	.888	8500	22.8	...	...	...	Clear
.310	3.52	3.775	37430	11.5	...	...	...	Clear
.004	3.30	3.303	32710	18.1	...	...	...	Clear
.004	6.60	6.603	65710	18.5	...	...	...	Clear
.003	2.75	2.752	27200	9.1	...	...	...	Clear
.005	7.59	7.594	75620	32.2	...	...	...	Clear
.007	7.70	7.706	76740	30.5	...	...	...	Clear
.003	11.88	11.882	118500	41.5	...	...	...	Clear
.003	3.08	3.082	30500	14.6	...	...	...	Clear
.006	6.71	6.715	66830	20.3	...	...	...	Clear
.620	5.72	6.231	61990	23.0	...	...	...	Clear
.005	1.10	1.104	10720	9.5	...	...	...	Clear
.002	1.65	1.651	16290	10.9	...	...	...	Clear
.004	2.09	2.093	20610	6.2	...	...	...	Clear
.290	1.76	1.998	19660	15.5	...	...	...	Clear
.300	1.43	1.677	16450	12.8	...	...	...	Clear
.004	5.61	5.613	55810	22.4	...	...	...	Clear
.003	8.80	8.802	87700	26.0	...	...	...	Clear
1.250	5.50	6.530	64980	15.8	...	...	...	Clear
.110	1.98	2.070	20480	7.0	...	...	...	Turbid, residue yellow
.009	.55	.557	5250	2.2	...	...	...	Turbid
.009	.44	.447	4150	2.5	...	...	...	Turbid
.005	.33	.334	3020	5.8	...	...	...	Clear
.007	3.85	3.856	38240	51.9	...	...	...	Clear
.003	4.07	4.072	40400	11.5	...	...	...	Clear
.005	5.50	5.504	54720	14.3	...	...	...	Clear
4.900	13.75	17.783	177510	50.6	...	...	...	Slightly turbid, yellowish
.082	7.15	7.217	71850	12.9	...	...	...	Clear
0.75	6.60	6.661	66290	24.8	...	...	...	Clear
.006	.22	.225	1930	3.6	...	...	...	Clear
.006	.66	.665	6330	5.0	...	...	...	Clear
.007	0.0	.006	0	2.5	...	...	...	Clear
.005	2.86	2.864	28320	7.2	...	...	...	Clear
.004	4.18	4.183	41510	7.8	...	...	...	Clear
.002	3.08	3.081	30490	8.7	...	...	...	Clear
.003	8.03	8.032	80000	51.9	...	...	...	Clear
.980	5.50	6.305	62730	29.5	...	...	...	Clear
.075	4.84	5.901	58790	8.5	...	...	...	Clear
.003	1.87	1.872	18400	6.7	...	...	...	Clear

TABLE XV.—

Date of Receipt of Sample.	DESCRIPTION.	Temp. C.	Total solid Impurity.	Organic Carbon.	Organic Nitrogen.
1879.	WELL WATERS—(continued.)				
May 2nd	7 Court, Bristol Street	...	224.0	...	very large
" "	21 and 22, Bristol Street	...	172.0	...	large
" "	7 Court, Bell Barn Road	...	131.0	...	"
" "	50 and 51 Courts, Bell Barn Rd. (Scarlet Fever)	...	129.0	...	...
" "	63 Court, Bell Barn Road	...	150.0	...	very large
" 7th	18 Court, Great King Street (Whooping Cough)	...	156.0	...	...
" "	2 Court, Leopold Street (Typhoid)	...	191.0	...	very large
" "	71 and 72, Stratford Place	...	98.6	...	...
" "	5 and 6 Courts, Wheeler St. (Whooping Cough)	...	94.6	...	very large
" "	Back 250, Great Russell Street	...	143.0	...	...
" "	77 and 78, Burbury Street	...	309.7	...	...
" 12th	104—110, Vaughton Street (Whooping Cough)	...	192.0	...	...
" "	34—37, Ryland Street, Deritend	...	179.0	...	very large
" "	1 and 2 Courts, Kyrwick's Lane	...	135.0	...	"
" "	12 Court, Gooch Street (Scarlet Fever)	...	314.6	...	...
" "	29, Angelina Street (Whooping Cough)	...	202.4	...	very large
" "	Bedford Buildings, Camp Hill (Scarlet Fever)	...	179.0	...	"
" 16th	No. 19, and 5 Court, High Street	...	192.0	...	"
" "	27½, Highgate Street (Typhoid)	...	209.0	...	"
" "	Leopold Terrace, Leopold Street (Scarlet Fever)	...	189.0	...	"
" "	6 Court, Angelina Street	...	149.6	...	large
" "	2 and 3, Leopold Street (Scarlet Fever)	...	156.4	...	very large
" "	11, Leopold Street, and 11—13, Dymoke Street	...	157.4	...	"
" "	31 and 32, Wordsworth Road	...	152.0	...	...
" 21st	Stone's Buildings, Denbigh St. (Scarlet Fever)	...	69.0	...	very large
" "	40 and 41, Herbert Road (Whooping Cough)	...	53.0	...	"
" "	42 and 43, Chapman Road	...	262.6	...	...
" "	17 Court, Digbeth	...	33.4	...	large
" "	63—66, Digbeth	...	267.4	...	...
" 26th	98—101, Ryland Road	...	96.0	...	...
" "	8 Court, Lee Bank Road (Scarlet Fever)	...	143.0	...	...
" "	80 and 81, Lee Bank Road	...	123.0	...	rather large
" "	9 Court, Lee Bank Road, and 104 and 105, Ryland Road	...	114.0	...	large
" "	54 Court, Bell Barn Road	...	71.4	...	"
" "	55 Court, Bell Barn Road (Scarlet Fever)	...	90.4	...	"
June 7th	125 and 126, Pershore Road	...	50.0	...	excessive
" "	62 and 63, Highgate Lane	...	96.0	...	...
" "	342 and 343, Bristol Road (Diphtheria)	...	102.0	...	very large
" "	21 and 22, Mole Street	...	140.6	...	"
" "	78 and 79, Mole Street	...	261.4	...	...
" "	3 Court, Priestley Road	...	99.4	...	very large
" 11th	24 and 25, Talbot Street	...	123.0	...	...
" "	26 and 27, Talbot Street	...	117.6	...	...
" "	Baltimore Cottages, Talbot Street	...	109.6	...	...
" "	23—25, Harding Street (All Saints)	...	110.6	...	...
" "	24, Little King Street	...	51.4	...	very large
" "	25—28, Little King Street	...	190.4	...	large
" 13th	47 and 48, Abbey Street (Whooping Cough)	...	75.0	...	very large

(continued).

Ammonia	Nitrogen as Nitrates and Nitrites	Total Combined Nitrogen.	Previous Sewage or Animal Contam- ination. (Estimated)	Chlorine.	Hardness.			REMARKS.
					Tempor- ary.	Perman- ent.	Total.	
·004	10·89	10·893	108610	23·0	...	...	...	Clear
·001	8·58	·8581	85490	20·9	...	...	...	Clear
·009	5·50	5·507	54750	11·9	...	...	...	Clear
·065	6·27	6·323	62910	10·7	...	...	...	Clear
·003	5·72	5·722	56900	13·1	...	...	...	Clear
·175	4·95	5·094	50620	22·5	...	...	...	Clear
·006	3·85	3·855	38230	16·9	...	...	...	Clear
·028	3·41	3·433	34010	6·0	...	...	...	Clear
·007	2·09	2·096	20640	11·1	...	...	...	Clear
·055	6·38	6·425	63930	18·2	...	...	...	Clear
·850	10·89	11·590	115680	25·6	...	...	...	Clear
1·250	4·18	5·210	51880	23·2	...	...	...	Clear
·009	2·20	2·207	21750	13·0	...	...	...	Clear
·008	3·19	3·197	31650	10·1	...	...	...	Clear
2·460	7·81	9·828	97960	41·1	...	...	...	Clear
·012	4·29	4·300	42780	15·9	...	...	...	Clear
·007	5·39	5·396	53640	10·9	...	...	...	Clear
·008	6·60	6·607	65750	17·1	...	...	...	Clear
·010	5·28	5·288	52560	17·9	...	...	...	Clear
·004	4·51	4·513	44810	12·9	...	...	...	Clear
·006	2·42	2·425	23930	10·9	...	...	...	Clear
·007	2·31	2·316	22840	11·5	...	...	...	Clear
·008	3·19	3·196	31640	11·7	...	...	...	Clear
·490	5·06	5·464	54320	23·7	...	...	...	Clear
·008	·77	·776	7440	2·2	...	...	...	Clear
·007	1·54	1·546	15140	4·5	...	...	...	Clear
4·500	17·05	20·749	207170	35·5	...	...	...	Clear
·012	·22	·230	1980	1·9	...	...	...	Clear
1·050	2·75	3·614	35820	37·5	...	...	...	Clear
·014	4·40	4·411	43790	7·9	...	...	...	Clear
·025	8·25	8·270	82380	13·2	...	...	...	Clear
·011	6·05	6·059	60270	11·3	...	...	...	Clear
·003	4·95	4·952	49200	11·0	...	...	...	Clear
·003	2·75	2·752	27300	9·5	...	...	...	Clear
·004	4·18	4·183	41510	11·5	...	...	...	Clear
·005	·88	·884	8520	4·0	...	...	...	Clear, greenish
·048	1·21	1·249	12170	7·1	...	...	...	Clear
·004	2·64	2·643	26110	9·0	...	...	...	Clear
·005	6·49	6·494	64620	6·0	...	...	...	Clear
·250	15·40	15·606	156740	29·5	...	...	...	Clear
·005	4·18	4·184	41520	4·8	...	...	...	Clear
·620	6·71	7·220	71980	12·9	...	...	...	Clear
·810	5·50	6·168	61630	13·8	...	...	...	Clear
·170	4·95	5·090	50580	12·3	...	...	...	Clear
·160	5·28	5·412	53800	13·1	...	...	...	Clear
·004	1·43	1·433	14010	6·1	...	...	..	Clear
·007	7·92	7·926	78940	21·3	...	...	...	Clear
·006	3·30	3·305	32730	4·6	...	...	...	Clear

TABLE XV.—

Date of Receipt of Sample.	DESCRIPTION.	Temp. C.	Total solid Impurity.	Organic Carbon.	Organic Nitrogen.
1879.	WELL WATERS—(continued).				
July 25th	6 Court, Bordesley Street ... ..	...	207·4	...	...
" 29th	The Laurels and Reeves' Buildings, Hickman Road .. ..	...	91·0	...	...
" "	The Hollies, Hickman Road ... ..	...	50·0	...	very large
" "	4 and 5, Priestley Road ... ..	...	104·6	...	"
" "	6 and 7, Priestley Road ... ..	...	148·0	...	"
" "	12—14, Wynn Street ... ..	...	113·4	...	large
" "	23 and 24, Wellington Road... ..	...	83·4	...	very large
Aug. 5th	1 Court, Railway Terrace, Vauxhall Rd.	...	220·4	...	...
" "	2 Court, Vauxhall Road ... ..	...	46·6	...	...
" "	2 to 7, Vauxhall Road ... ..	...	208·2	...	...
" "	1 and 2, Belmont Passage ... ..	...	163·4	...	...
" "	16 and 17, Lee Bank Road ... ..	...	146·4	...	...
" "	95 to 100, Lee Bank Road ... ..	...	112·2	...	...
" "	51 and 52, Kyrwick's Lane ... ..	...	185·4	...	...
" "	53, Kyrwick's Lane ... ..	...	207·6	...	...
" "	2 Court, Clissold Street ... ..	...	60·2	...	...
" "	19 to 25, Crabtree Road ... ..	...	50·4	...	...
" "	33, Houghton Place, and 36 and 37, Highgate Place ... ..	...	95·4	...	...
" "	398 and 399, Moseley Road ... ..	...	203·2	...	...
" 18th	36 and 37, Gladstone Road ... ..	...	84·4	...	...
" "	49, Gladstone Road ... ..	...	36·6	...	...
" "	60 and 61, Gladstone Road ... ..	...	211·2	...	...
" "	62 and 63, Gladstone Road ... ..	...	175·4	...	...
" "	3 Court, Holloway Head ... ..	...	149·4	...	...
" "	288 and 289, Great Colmore Street ...	...	167·2	...	...
" 19th	1 and 2, Oak Villas, Hobmoor Lane...	...	84·4	...	very large
" "	3 and 4, Oak Villas, Hobmoor Lane...	...	104·6	...	"
" "	5 and 6, Oak Villas, Hobmoor Lane...	...	60·2	...	"
" "	7 and 8, Oak Villas, Hobmoor Lane...	...	67·4	...	"
" 20th	Green Lane Terrace, Green Lane (Scarlet Fever) ... ..	...	83·4	...	"
" "	116 and 117, Coventry Road ... ..	...	122·2	...	large
" 26th	294—297, Long Acre ... ..	...	66·4	...	...
" "	298—302, Long Acre ... ..	...	62·6	...	very large
" "	303—306, Long Acre ... ..	...	64·2	...	large
" "	9 Court, Cromwell Street ... ..	...	181·4	...	...
" "	15 Court, Hatchett Street ... ..	...	212·4	...	very large
" "	291 and 292, Bridge Street West (Scarlet Fever) ... ..	...	124·2	...	"
Sept 2nd	198 and 199, Lodge Road (Diarrhoea).	...	116·4	...	...
" "	389 and 390, Lodge Road (Scarlet Fever) ... ..	...	152·6	...	...
" "	100 and 101, Talbot Street ... ..	...	82·6	...	very large
" "	4 and 5, Harding Street (Scarlet Fever)	...	129·0	...	...
" "	20 and 21, Lee Bank Road ... ..	...	159·4	...	very large
" "	2, Frederick Road ... ..	...	52·2	...	...
" 5th	24 and 25, Ladypool Lane ... ..	...	169·4	...	very large
" "	34 and 35, Ladypool Lane ... ..	...	98·6	...	"
" "	36 and 37, Ladypool Lane ... ..	...	90·2	...	"
" "	46 and 47, Gladstone Road ... ..	...	29·2	...	large

(continued.)

Ammonia	Nitrogen as Nitrates and Nitrites.	Total Combined Nitrogen.	Previous Sewage or Animal Contam- ination (Estimated)	Chlorine.	Hardness.			REMARKS.
					Tempor- ary.	Perman- ent.	Total.	
2.500	8.58	10.639	106070	24.8	...	...	...	Clear
.095	2.31	2.384	23520	4.8	...	...	...	Clear
.008	.99	.996	9640	2.2	...	...	...	Clear
.007	4.73	4.735	47030	7.6	...	...	...	Bright, with many sus- pended particles
.008	6.60	6.606	65740	9.9	...	...	...	Clear
.005	5.39	5.394	53629	13.0	...	...	...	Clear
.010	3.30	3.308	32760	6.7	...	...	...	Clear
.007	9.90	9.905	98730	24.2	...	...	...	Clear
.006	1.65	1.659	16270	4.9	...	...	...	Clear
.003	8.36	8.362	83304	27.2	...	...	...	Clear
.056	5.39	5.436	54040	10.6	...	...	...	Clear
.009	4.62	4.627	45950	25.8	...	...	...	Turbid
.095	4.73	4.808	47760	10.1	...	...	...	Clear
.014	6.82	6.831	67995	14.3	...	...	...	Clear
.008	8.80	8.806	87740	17.5	...	...	...	Clear
.009	1.76	1.767	17354	7.1	...	...	...	Clear
.006	.99	.995	9630	10.0	...	...	...	Clear
.009	2.86	2.867	28350	6.0	...	...	...	Clear
.007	5.72	5.725	56930	11.6	...	...	...	Clear
.010	1.65	1.658	16260	6.5	...	...	...	Turbid, yellowish
.012	.22	.230	1980	1.9	...	...	...	Turbid
2.450	10.01	12.01	119780	15.2	...	...	...	Bright with many sus- pended particles
4.100	8.69	12.05	120180	16.1	...	...	...	Clear
.027	5.50	5.522	54902	27.1	...	...	...	Slightly turbid
.021	9.35	9.367	93350	19.9	...	...	...	Clear
.007	1.32	1.326	12940	4.3	...	...	...	Clear
.008	2.53	2.536	25040	7.9	...	...	...	Clear
.006	.66	.665	6330	1.9	...	...	...	Bright, with some large suspended particles, like wood fibre
.006	.33	.335	3030	2.5	...	...	...	Slightly turbid
.007	3.52	3.526	34940	5.2	...	...	...	Slightly turbid
.004	4.62	4.623	45910	10.7	...	...	...	Clear
1.200	1.65	2.838	28060	3.7	...	...	...	Clear
.005	2.75	2.754	27320	5.4	...	...	...	Clear
.004	2.97	2.973	29410	6.1	...	...	...	Clear
.520	9.35	9.778	97460	17.1	...	...	...	Clear
.006	11.44	11.445	114130	35.8	...	...	...	Clear
.003	1.98	1.982	19500	16.8	...	...	...	Clear
.035	5.61	5.639	56070	9.9	..	...	...	Turbid
.920	4.40	5.157	51250	12.4	...	...	...	Turbid
.007	3.30	3.306	32740	7.1	...	...	...	Clear
.810	6.16	6.828	67960	17.9	...	...	...	Clear
.005	7.48	7.484	74520	23.1	...	...	...	Clear
.032	1.76	1.786	17540	4.2	...	...	...	Turbid
.017	7.26	7.274	72420	16.0	...	...	...	Clear
.003	1.76	1.762	17300	3.1	...	...	...	Clear
.006	1.10	1.105	10730	3.5	...	...	...	Clear
.003	.66	.662	6300	1.8	...	...	...	Clear

TABLE XV.—

Date of Receipt of Sample.	DESCRIPTION.	Temp. C.	Total solid Impurity.	Organic Carbon.	Organic Nitrogen.
1879.	WELL WATERS—(Continued).				
Sept. 5th	10 Court, White Road (Scarlet Fever)	...	35.4	...	very large
" "	Clifton Terrace, White Road...	...	46.2	...	"
" 8th	Louisa Terrace, Bordesley Park Road (first pump) ...	...	105.4	...	...
" "	Louisa Terrace, Bordesley Park Road (second pump) ...	...	260.6	...	very large
" "	24 and 25, Scholefield Street...	...	136.2	...	"
" "	139 and 140, Nechells Place (Scarlet Fever)...	...	118.4	...	...
" "	23—29, Cattell's Grove (Scarlet Fever)	...	64.4	...	large
" "	4—10, Walter Street...	...	102.2	...	very large
" 12th	13 and 14, Ladypool Lane ...	...	179.4	...	...
" "	15 and 16, Ladypool Lane ...	...	132.6	...	...
" "	17 and 18, Ladypool Lane ...	...	66.2	...	large
" "	19 and 20, Ladypool Lane ...	...	96.4	...	...
" "	46—50, Turner Street (Scarlet Fever)	...	73.0	...	large
" "	8 and 10 Courts, Angelina Street ...	...	184.2	...	"
" 15th	14 and 15, Gladstone Road ...	...	112.4	...	excessive
" "	16 and 17, Gladstone Road ...	...	106.6	...	very large
" "	51 and 52, Gladstone Road ...	...	54.2	...	...
" "	115 and 116, Gladstone Road ...	...	138.4	...	very large
" "	12 and 13, Erasmus Road (Scarlet Fever)	...	130.4	...	"
" 16th	7 Court, Summer Lane ...	...	297.2	...	...
" 18th	8—12, Belmont Row... ..	...	218.4	...	very large
" "	1 Court, Duddeston Mill Road ...	...	191.7	...	...
" "	28—33, Little Francis Street ...	...	196.2	...	rather large
" "	1 and 2, St. James's Place (Whooping Cough) ...	...	56.4	...	"
" "	24 Court, Bell Barn Road ...	...	142.4	...	...
" "	239, Bell Barn Road, and 3—8, Ryland Road ...	...	120.2	...	...
" 29th	25 and 26, Herbert Road ...	...	178.4	...	...
" "	325—327, Coventry Road (Scarlet Fever) ...	...	102.6	...	excessive
" "	41 and Wilkes' premises, Gibb Street...	...	268.2	...	very large
" "	Brearley House, Grange Road ...	...	38.4	...	large
" "	4 Court, Allcock Street ...	...	181.4	...	large
" "	4 and 5, Lloyd Street... ..	...	86.2	...	very large
" "	25 and 26, Herbert Road ...	...	178.4	...	...
" "	325—327, Coventry Road (Scarlet Fever) ...	...	102.6	...	excessive
" "	41, & Wilkes' Premises, Gibb Street...	...	268.2	...	very large
" "	Brearley House, Grange Road ...	...	38.4	...	large
" "	4 Court, Allcock Street (Scarlet Fever)	...	181.4	...	large
" "	4 and 5, Lloyd Street ...	...	86.2	...	very large
Oct. 7th	2 and 3 Courts, Lower Essex Street...	...	90.4	...	"
" "	Bull's Head Yard, Gt. Queen Street...	...	354.6	...	excessive
" 8th	33 Court, Farm Street (Scarlet Fever)	...	153.2	...	...
" "	57 Court, Farm Street (Scarlet Fever)	...	84.4	...	moderate
" "	Back 348, Farm Street ...	...	95.5	...	...
" "	12—15, Little King Street ...	...	102.2	...	large
" 10th	11—14, Railway Terrace (Typhoid)...	...	62.4	...	very large
" "	10, 12, and 14, Cato Street North ...	...	148.6	...	...
" "	64—66, Salfley Road ...	...	82.2	...	large

(continued).

Ammonia	Nitrogen as Nitrates and Nitrites.	Total Combined Nitrogen.	Previous Sewage or Animal Contam- ination. (Estimated)	Chlorine.	Hardness.			REMARKS.
					Tempor- ary.	Perman- ent.	Total.	
·007	·11	·116	840	2·5	...	...	...	Clear
·004	·88	·883	8510	1·5	...	...	...	Clear
·490	1·10	1·140	11080	8·0	...	...	...	Slightly turbid
·009	2·86	2·867	28350	9·5	...	...	...	Clear
·014	5·17	5·181	51490	10·7	...	...	...	Slightly turbid
·065	5·50	5·553	55210	11·5	...	...	...	Clear
·004	1·43	1·433	14010	4·3	...	...	...	Clear
·005	2·09	2·094	20620	5·4	...	...	...	Clear
·410	7·70	8·038	80060	24·9	...	...	...	Turbid
·085	7·15	7·220	71980	11·3	...	...	...	Slightly turbid
·004	2·75	2·753	27210	1·9	...	...	...	Bright
·030	2·31	2·334	23020	7·1	...	...	...	Slightly turbid
·006	1·43	1·435	14030	3·8	...	...	...	Clear
·003	3·63	3·632	36000	12·4	...	...	...	Clear
·012	3·41	3·420	33980	5·9	...	...	...	Slightly turbid, slightly greenish
·003	1·43	1·432	14000	6·1	...	...	...	Bright
·035	1·10	1·129	10970	2·7	...	...	...	Clear
·004	3·96	3·963	39310	8·5	...	...	...	Clear
·004	5·06	5·063	50310	10·3	...	...	...	Clear
1·150	17·93	19·693	196610	35·5	...	...	...	Clear
·005	7·92	7·924	78920	28·5	...	...	...	Clear
2·225	8·36	10·186	101540	23·0	...	...	...	Clear
·004	10·23	10·233	102010	26·1	...	...	...	Clear
·005	2·61	2·644	26120	5·8	...	...	...	Clear
·095	7·92	7·999	79670	15·5	...	...	...	Muddy
·196	6·49	6·646	66140	10·8	...	...	...	Clear
·490	10·12	10·524	104920	17·9	...	...	...	Clear
·006	2·75	2·755	27230	6·7	...	...	...	Clear
·006	3·19	3·195	31630	43·1	...	...	...	Clear
·006	·33	·335	3030	1·2	...	...	...	Clear
·003	6·27	6·272	62400	18·1	...	...	...	Clear
·004	1·65	1·653	16210	5·5	...	...	...	Clear
·490	10·12	10·524	104920	17·0	...	...	...	Clear
·006	2·75	2·755	27230	6·7	...	...	...	Clear
·006	3·19	3·195	31630	43·1	...	...	...	Clear
·006	·33	·335	3030	1·2	...	...	...	Clear
·003	6·27	6·272	62400	18·1	...	...	...	Clear
·004	1·65	1·653	16210	5·5	...	...	...	Clear
·012	3·52	3·550	34980	11·3	...	...	...	Clear
·004	11·00	11·003	102710	46·5	...	...	...	Clear
·035	7·04	7·069	70370	21·5	...	...	...	Clear
·005	2·64	2·644	26120	8·8	...	...	...	Clear
·550	1·32	1·773	17410	13·5	...	...	...	Clear
·006	4·40	4·405	43730	9·3	...	...	...	Muddy
·007	2·20	2·205	21730	5·9	...	...	...	Clear
·480	4·84	3·235	52030	12·5	...	...	...	Clear
·006	·99	·995	9630	5·0	...	...	...	Clear

TABLE XV.—

Date of Receipt of Sample.	DESCRIPTION.	Temp. C.	Total solid Impurity	Organic Carbon.	Organic Nitrogen.
1879.	WELL WATERS—(continued).				
Oct. 10th	61—72, Saltley Road ...	...	76.4	...	very large
" "	1 Court, Little Bow Street (Diarrhoea) ...	...	181.4	...	large
" "	4 and 5, New Bridge Street, and 60—62, Bath Row... ..	...	86.2	...	very large
" 14th	Friston Terrace, Friston St. (Typhoid) ...	...	56.4	...	moderate
" "	185, Monument Road ...	...	71.9	...	rather large
" "	Back 55, Stratford Street (Diphtheria) ...	...	103.2	...	very large
" "	Back 58, Stratford Street (Diphtheria) ...	...	104.4	...	...
" "	126 and 127, Larches Street... ..	...	62.5	...	moderate
" "	130 and 131, Larches Street (Diphtheria) ...	...	133.2	...	very large
" 17th	63 and 64, Rocky Lane ...	...	124.4	...	...
" "	69, Rocky Lane ...	...	119.6	...	...
" "	203, Pershore Road ...	...	84.2	...	large
" "	Teakman's Premises, Floodgate Street ...	...	236.2	...	excessive
" "	11—18, Cato Street, North ...	...	141.4	...	very large
" "	72 and 74, Cato Street ...	...	54.2	...	large
" 21st	7 and 8, Hawkes Street ...	...	138.4	...	very large
" "	5—10, Lee Mount ...	...	141.6	...	"
" "	186, Little Green Lane (Diphtheria)... ..	...	218.2	...	...
" "	Collingwood Terrace, Muntz St. (Scarlet Fever) ...	...	116.4	...	large
" "	16 Court, Lee Bank Road ...	...	94.4	...	...
" "	405—407, Coventry Road ...	...	146.2	...	large
" 27th	3 and 4, Milton Road ...	...	76.4	...	...
" "	Powell's Buildings, Milton Road ...	...	125.6	...	...
" "	141—146, Lower Camden Street ...	...	132.2	...	very large
" "	1 and 2, Vyse Street... ..	...	56.4	...	...
" "	4 and 5, Manor Street ...	...	41.4	...	very large
" "	Ethel Place, Wyndham Road (Scarlet Fever) ...	...	93.2	...	...
" 31st	13 and 14, Mount Street, Nechells ...	...	84.4	...	very large
" "	100—104, Nechells Park Road ...	...	149.6	...	large
" "	238 & 239, Nechells Park Road ...	...	90.2	...	...
" "	240 and 241, Nechells Park Road ...	...	76.4	...	very large
" "	25 and 26, Pershore Road ...	...	74.4	...	"
" "	130 and 132, Belgrave Road... ..	...	168.2	...	...
Nov. 5th	Winson Place, Winson Street ...	...	103.0	...	...
" "	106 and 107, Winson Street (Scarlet Fever) ...	...	104.4	...	...
" "	Winson Terrace, Winson Street ...	...	101.2	...	...
" "	323—325, Dndley Road ...	...	35.6	...	...
" "	14—18, Auckland Road ...	...	55.8	...	rather large
" "	55—57, Auckland Road ...	...	80.4	...	moderate
" 11th	44—46, Grange Road ...	...	139.0	...	...
" "	7 and 8, Tillingham Street (Diphtheria) ...	...	102.4	...	very large
" "	24, Parliament Street (Diphtheria) ...	...	99.0	...	"
" 10th	8 and 9 Courts, Conybere St. (Typhoid) ...	...	92.8	...	"
" "	92, Charles Henry Street (Typhoid) .	...	205.8	...	...
" 11th	79 and 80, Camp Hill (Diphtheria) ...	...	155.4	...	very large
" 13th	31 and 32, Glover's Road ...	...	102.0	...	"
" "	119 and 121, Devonshire Street ...	...	47.4	...	large
" "	22, Turner's Buildings, Park Road ...	...	96.2	...	moderate
" "	30, Turner's Buildings, Park Rd. (Scarlet Fever) ...	...	76.6	...	...

(continued).

Ammonia	Nitrogen as Nitrates and Nitrites.	Total Combined Nitrogen.	Previous Sewage or Animal Contam- ination. (Estimated)	Chlorine.	Hardness.			REMARKS.
					Tempor- ary.	Perman- ent.	Total.	
·008	·88	·886	8540	5·3	...	...	...	Clear
·004	8·63	8·633	86010	23·9	...	...	...	Clear
·018	3·19	3·025	31730	6·5	...	...	...	Clear
·001	2·86	2·861	28290	8·6	...	...	...	Clear
·002	2·42	2·421	23890	7·6	...	...	...	Clear
·006	3·08	3·085	30530	3·8	...	...	...	Clear
·055	5·17	5·215	51830	9·5	...	...	...	Clear
·001	1·32	1·321	12890	5·1	...	...	...	Clear
·002	5·06	5·061	50290	7·9	...	...	...	Clear
·620	2·86	3·377	33380	11·8	...	...	...	Clear
1·450	3·08	4·274	42420	7·8	...	...	...	Muddy
·004	·88	·883	8510	5·6	...	...	...	Clear
·015	5·94	5·952	59200	21·5	...	...	...	Clear
·008	2·64	2·646	26142	8·8	...	...	...	Clear
·010	1·21	1·218	11860	6·1	...	...	...	Clear
·005	3·96	3·964	39320	10·4	...	...	...	Clear
·004	2·42	2·423	23910	34·8	...	...	...	Clear
·195	9·24	9·343	93110	24·0	...	...	...	Clear
·004	3·30	3·303	32710	8·2	...	...	...	Clear
·060	4·29	4·339	43070	10·1	...	...	...	Clear
·003	7·70	7·702	76700	13·0	...	...	...	Clear
·055	·55	·595	5630	4·8	...	...	...	Clear
·075	5·94	6·002	59700	10·8	...	...	...	Clear
·005	5·39	5·394	53620	17·4	...	...	...	Clear
·058	3·52	3·567	35350	5·9	...	...	...	Clear
·010	1·10	1·108	10760	1·8	...	...	...	Clear
·125	3·08	3·182	31500	9·5	...	...	...	Slightly turbid
·009	2·75	2·757	27250	4·6	...	...	...	Clear
·005	6·45	6·454	64220	11·6	...	...	...	Clear
·045	2·86	2·897	28650	5·4	...	...	...	Clear
·006	2·64	2·645	26130	3·0	...	...	...	Clear
·006	2·31	2·315	22830	2·2	...	...	...	Clear
·300	3·30	3·547	35150	10·3	...	...	...	Clear
·420	4·18	4·526	44943	9·3	...	...	...	Clear
1·280	4·40	5·453	54210	12·2	...	...	...	Clear
·210	3·85	4·023	39910	9·7	...	...	...	Clear
·250	·88	1·086	10540	4·6	...	...	...	Clear
·003	2·09	2·092	20600	4·4	...	...	...	Clear
·002	2·42	2·421	23990	7·1	...	...	...	Clear
·950	1·10	1·88	18480	8·9	...	...	...	Clear
·008	1·98	1·986	19540	5·9	...	...	...	Clear
·016	4·51	4·523	44910	6·3	...	...	...	Clear
·909	1·54	1·547	15150	8·9	...	...	...	Clear
·470	·66	1·048	10160	26·6	...	...	...	Clear
·006	5·94	5·945	59130	14·9	...	...	...	Clear
·009	3·52	3·527	34959	8·1	...	...	...	Muddy, yellow, residue brown
·007	trace	trace	0	3·6	...	...	...	Muddy, brownish, residue brown
·013	2·86	2·87	28380	7·5	...	...	...	Clear
·450	2·20	2·571	25390	4·6	...	...	...	Clear

TABLE XV.—

Date of Receipt of Sample.	DESCRIPTION.	Temp. C.	Total solid Impurity.	Organic Carbon.	Organic Nitrogen.
1879.	WELL WATERS—(continued).				
Nov. 13th	81 and 82, Camp Hill ...	...	147·8	...	very large
" "	262—264, Great King Street ...	...	104·4	...	"
	159—161, Hockley Hill ...	...		
Dec. 3rd	28—32, Montague Street ...	...	246·0	...	...
" "	All Saints' Schools, All Saints' Street ...	...	175·4	...	large
" "	26 and 27, Bradford Street ...	...	236·2	...	"
" "	6 Court, Ford Street ... (Whooping Cough)	...	138·6	...	...
" "	176 and 177, Sherlock Street ... (Scarlet Fever)	...	467·8	...	...
" "	48 and 49 George Street West ...	...	53·4	...	...
" 9th	92 and 93, Larches Street ...	...	210·0	...	...
" "	17 and 19, Braithwaite Road ...	...	81·4	...	rather large
" "	1—5, Cooksey Road ...	...	105·2	...	"
" "	27, Tillingham Street (Scarlet Fever) ...	...	74·6	...	moderate
" "	Magdala Place, Main Street (Diarrhoea) ...	...	67·8	...	...
" "	14, Long Street ...	...	254·4	...	...
" 15th	2 Court, Beach Street (Diphtheria) ...	...	119·0	...	rather large
" "	Back 80, Friston Street ...	...	139·4	...	very large
" "	Arthur Terrace, Friston Street ...	...	71·2	...	large
" "	9 and 10, Noel Road... ..	...	92·6	...	very large
" "	22 and 24, Grosvenor Street West ...	...	173·8	...	large
" "	Ada Terrace and Lavinia Terrace, Osler Street (Measles) ...	...	91·4	...	very large
" 18th	67, Pershore Road ...	...	96·0	...	"
" "	94 and 96, Belgrave Road ...	...	394·4	...	"
" "	17 and 18, Wordsworth Road ...	...	117·2	...	...
" "	34 and 36, Golden Hillock Road ...	...	96·6	...	very large
" "	Wellesley House and Montague House, Wordsworth Road ...	...	151·8	...	"
" "	Fair View House, Golden Hillock Road ...	...	119·4	...	..
" 29th	16 Court, Geach Street ...	...	85·0	...	moderate
" "	84 and 85 Court, Geach Street (Diarrhoea) ...	...	181·4	..	large
" "	2, Whitmore Road ...	...	62·2	...	...
" "	3 and 4, Whitmore Road ...	...	46·6	...	small
" "	5, Whitmore Road ...	...	79·8	...	...
" "	8, Whitmore Road (Diphtheria) ...	...	78·4	...	...

(continued).

Ammonia	Nitrogen a Nitrates and Nitrites.	Total Combined Nitrogen.	Previous Sewage or Animal Contamin- ation. Estimated)	Chlorine.	Hardness.			REMARKS.
					Tempor- ary.	Perman- ent.	Total.	
·005	5·72	5·724	56220	13·5	...	...	...	Slightly turbid
·010	4·51	4·518	44860	11·2	...	...	...	Clear
·410	2·53	2·868	28360	18·5	...	...	...	Clear, a few suspended particles
·013	7·70	·771	76780	19·9	...	...	...	Clear
·022	2·20	2·218	21860	35·4	...	...	...
·520	8·80	9·223	91960	14·4	...	...	...
9·040	·88	·744	82880	78·3	...	...	...	Muddy, brown, residue brown
·065	trace	·053	210	2·3	...	...	...	Muddy, yellow, residue brown
·660	8·14	8·684	86520	10·9	...	...	...	Clear
·005	1·76	1·764	17320	4·5	...	...	...	Clear
·002	·44	·441	4190	7·6	...	...	...	Clear
·003	·22	·222	1900	5·9	...	...	...	Clear
·120	trace	·099	670	2·9	...	...	...	Clear
·550	11·33	11·784	117520	21·5	...	...	...	Clear
·005	5·50	5·504	54720	9·9	...	...	...	Clear
·004	7·15	7·153	71210	13·1	...	...	...	Clear
·003	3·84	3·842	38100	7·4	...	...	...	Clear
·002	3·30	3·301	32690	8·5	...	...	...	Clear
·006	2·31	2·315	22830	44·1	...	...	...	Clear
·004	·77	·773	7410	15·6	...	...	...	Clear
·004	2·42	2·423	23910	6·4	...	...	...	Clear
·003	8·14	8·142	81100	18·5	...	...	...	Clear
·015	4·73	4·742	47100	7·4	...	...	...	Clear
·009	3·30	3·307	32750	11·1	...	...	...	Clear
·006	5·61	5·615	55830	13·2	...	...	...	Clear
1·400	5·50	6·652	66200	14·7	...	...	...	Clear
·010	2·42	2·428	23960	9·1	...	...	...	Clear
·005	4·62	4·624	45920	14·6	...	...	...	Clear
·480	2·20	2·595	25630	4·2	...	...	...	Turbid
·001	·99	·091	9590	2·1	...	...	...	Clear
·019	2·64	2·655	26230	6·9	...	...	...	Clear
·580	2·20	2·678	26460	4·9	...	...	...	Clear

TABLE XVI.

RETURN FOR THE PERIOD 1ST JULY, 1878, TO 30TH JUNE, 1879, RESPECTING THE VACCINATION OF CHILDREN WHOSE BIRTHS WERE REGISTERED IN THE BOROUGH DURING THE SAID PERIOD.

PARISH.	Number of Births returned in the "Birth List Sheets " as Registered.	Number of these Births duly entered in Columns 10, 11, and 13 of the "Vaccination Register" (Birth List Sheets), viz. :				Number of these Births which remained unentered in the "Vaccination Register" on account (as shown by Report Book) of				Number of these Births remaining neither duly entered in the "Vaccination Register" (cols. 3, 4, 5, and 6 of this Return) nor temporarily accounted for in the "Report Book" (cols. 8, 9, and 10 of this Return).	
		Col. 10.		Col. 11.		Col. 13.		Postponement by Medical Certificate.	Removal to Districts the Vaccination Officer of which has been duly appraised.		Removal to places unknown or which cannot be reached; and Cases not having been found.
		"Successfully Vaccinated."	"Insusceptible of Vaccination"	"Had Smallpox"	"Dead, Unvaccinated."						
1		3	4	5	6	8	9	10	11		
Birmingham	9,712	8,170	18	—	903	105	16	500	—		
Aston (within the Borough)	5,638	4,650	2	—	526	63	12	321	64		
Edghaston (")	483	373	—	—	42	19	7	42	—		

Table of the Number of Deaths occurring in each Street in the Borough of
Birmingham during the Year 1879.

STREETS.	Zymotic Diseases	Other Diseases	STREETS.	Zymotic Diseases	Other Diseases	STREETS.	Zymotic Diseases	Other Diseases
A			Bath Street	2	6	C		
Abberley Street	1	1	Beach Street	3	11	Calthorpe Road		1
Abbey Street	1	5	Beak Street	1	4	Cambridge Crescent		1
Aberdeen Street	4	13	Beatrice Crescent		1	Cambridge Street		5
A. B. Row		1	Beaufort Road		3	Camden Drive		3
Adam Street	3	11	Bedford Road		1	Camden Grove		
Adderley Street	3	7	Beechfield Road	1	1	Camden Street	4	27
Adelaide Street, Deritend	1	12	Belgrave Road		5	Camp Hill		11
Adelaide St., Duddeston	2	3	Bell Barn Road	6	34	Camp Street	3	6
Albert Street, Deritend		4	Bellis Street		1	Canal Street	2	5
Albert Street, All Saints'		2	Bell Street			Cannon Street		4
Albert Street, St. Martin's			Belmont Passage		4	Cape Lane		
Albion Street	1	3	Belmont Row	2	7	Cape Street		2
Alcester Street	3	17	Benaere Street	2	20	Cardigan Street	4	11
Alexandra Road		2	Bennett's Hill	2		Carlisle Street		3
Alexandra Street	1	3	Berkeley Street			Caroline Street		5
Alfred Street		2	Berner's Street		5	Carpenter Road		1
Alcock Street	2	6	Beswick Street			Carr's Lane		1
Allen Street			Betholom Row		2	Cartland Road		3
Allesley Street		5	Birchall Street	1	8	Carver Street	1	9
Allison Street	5	20	Bird Lane	4	26	Castle Street, St. Martin		
All Saints' Road		3	Bishopgate Street	5	9	Castle Street, Deritend		
All Saints' Street		1	Bishop St., St. Martin's			Catheart Street		2
Alma Crescent		2	Bishop Street, St. Mary's			Cato Street		12
Alma Street		3	Bishop Street South	1	5	Cato Street North	1	9
Alston Street	1	6	Bissell Street	4	13	Cattell Road	5	12
Ampton Road			Blake Lane			Cattell Grove		2
Anderton Road	1	8	Blews Street	2	5	Cecil Street		
Anderton Street	2	5	Blews Street West	1	14	Centre Row	4	27
Andover Street			Bloomsbury	5	17	Chad Road	1	2
Angelina Street	4	22	Bloomsbury Street	4	13	Chapel House Street	1	
Ann Street		1	Blucher Street	1	10	Chandos Road		4
Argyle Street		5	Bolton Road	5	16	Chapel Street		3
Armoury Road			Bolton Street		6	Chapman Road		
Arsenal Street		1	Bond Street		3	Charles Arthur Street		11
Arthur Road		1	Bordesley Green	5	12	Charles Henry Street	5	24
Arthur Street	2	27	Bordesley Green Road			Charlotte Road		3
Ashted Row	5	15	Bordesley Park Road	1	15	Charlotte Street	2	4
Aston Brook Street		1	Bordesley Street	5	21	Chattaway Street		
Aston Road	2	19	Bow Street		6	Cheapside	8	36
Aston Street	2	18	Bowyer Street		2	Cheatham Street		1
Asylum Road	3	1	Bracebridge Street	2	13	Chequer's Walk		5
Athole Street			Bradford Street	9	20	Cherry Street		2
Atlas Street		2	Braithwaite Road		2	Cherry Wood Lane		
Auekland Road		4	Branson Street	4	9	Chester St., Ladywood	2	14
Augusta Street		4	Brasshouse Passage			Chester St., Duddeston	2	9
Augustus Road		3	Brass Street		6	Cheston Road		
Austin Street		5	Bread Lane			Christ Church Passage		
Avenue Road		1	Bread Street, St. Paul's		10	Church Road, All Saints'	1	2
			Bread Street, St. Martin's		2	Church Road, Duddeston		
B			Brearley Street	5	29	Church Road, Edgbaston		3
Bacchus Road	3	7	Brearley Street West	3	28	Church Street		6
Bagot Street	2	13	Brewery St., Deritend			Clarendon Road		
Bailey Street	1	2	Brewery St., St. Mary's	2	5	Clark Street	4	43
Baker Street	1	8	Brewery St., Duddeston	1	12	Claverdon Street		17
Balloon Street			Bricklin Street		2	Claybrook Street	1	1
Balsall Heath Road		2	Bridge Road		1	Clement Street	2	4
Balsall Street		1	Bridge Street, All Saints'		1	Cleve Terrace		
Banbury Street		1	Bridge Street, St. Thomas			Clissold Street	1	1
Barford Street	4	23	Bridge Street West	11	22	Cliveland Street	2	5
Barford Street South	1	10	Bristol Road	1	15	Coach Yard		
Barker Street		3	Bristol Street	1	13	Coleman Street	6	13
Barlow's Road			Broad Street	8	19	Coleshill Street	2	19
Barn Street		17	Bromsgrove Street	3	19	College Street		5
Barrack Street		1	Brookfield Road			Coinmore Row		2
Barr Street	2	13	Brook Road			Commercial Street		
Barr Street West	1	15	Brook Street			Communication Row		6
Bartholomew Row	1	1	Broom Street		3	Congreve Street		
Bartholomew Street	1	16	Bruton's Street			Constitution Hill		11
Baskerville Passage			Buckingham Street	13		Conybere Street	1	13
Baskerville Place			Buck Street	3		Cooksey Road	6	11
Bath Passage		2	Bullock Road		1	Cope Street	2	5
Bath Row	2	6	Bullock Street		3	Coplow Street	1	8
			Bull Ring	1	3			
			Bull Street		3			
			Burbury Street	3	12			
			Butler Street		3			
			Butler Street South		4			

STREETS.	Zymotic Diseases	Diseases	STREETS.	Zymotic Diseases	Others Disease	STREETS.	Zymotic Diseases	Other Disease
Cotton Street		4	Farm Road		1	Greaves' Court		
Coventry Road	5	31	Farm Street	11	43	Greenfield Creseent		2
Coventry Street	1	10	Farquhar Road			Green Lane	2	6
Cox Street.. ..		8	Fawdry Street			Green's Court		
Coxwell Road			Fazeley Street		6	Green Street, Deritend		4
Crabtree Road	1	4	Fisher Street		0	Green Street, All Saints'		4
Cranemore Street		2	Fleet Street		7	Green's Village	1	5
Cregoe Street	5	13	Floodgate Street.. ..	2	4	Greenway Street	4	13
Crescent	2	7	Florence Street	3	5	Grindstone Road		
Crescent Wharf		1	Fordrough Lane			Grosvenor Row		1
Cromwell Street	6	44	Fordrough Street	2	11	Grosvenor Street.. ..		
Crooked Lane			Ford Street	2	13	Grosvenor Street West	1	17
Cross Street	1	6	Forge Street		2	Grove Street		
Cuekoo Road	3	14	Foundry Road		1	Guest Street		1
Cumberland Street		3	Fowler Street		1	Guildford Street	3	8
Curzon Street		4	Fox Street.. ..		6	Gullet, St. Mary		
Cuthbert Road			Francis Road		3	Gullet, Deritend		
			Francis Street		14	Gullet, St. Thomas'		
			Frankfort Street	1	4			
			Franklin Street		1			
			Frank Street		2			
			Frederick Road		3			
			Frederick Street		6			
			Freeman Road		8			
			Freeman Street		3			
			Freeth Street	1	9	Hagley Road	1	10
			Friston Street	2	18	Hall Hill Road		2
						Hall Street		1
						Hampton Street	12	13
						Handsworth New Road		
						Hanley Street	2	8
						Hanover Street		1
						Harborne Road		5
						Harling St., St. George's		9
						Harding Street, All Saints'		1
						Harford Street		2
						Harrison's Road		1
						Hatchett Street	10	16
						Hawkes Street	1	2
						Heath Mill Lane	5	4
						Heath Street	3	28
						Heath Street South		3
						Heaton Street	2	13
						Helena Street		
						Henage Street	5	22
						Henley Street	2	6
						Henn Street		
						Henn's Walk	1	2
						Henrietta Street		3
						Henry Street	1	10
						Herbert Road	4	10
						Hermitage Road		
						Hickman Road		
						Hick Square		
						Hick Street		2
						Highfield Road		
						Highgate Lane	1	6
						Highgate Place		3
						Highgate Street	4	20
						High Park Street		6
						High Street		1
						High Street, Deritend	6	19
						Hill Street		10
						Hingeston Street... ..	4	17
						Hob Moor Lane		
						Hockley Hill		7
						Hockley Pool Road		
						Hockley Street	1	10
						Holborn Hill		4
						Holland Street		5
						Holliday Street	1	14
						Hollier Street	3	4
						Holloway Head	2	8
						Holly Road		
						Holt Street	1	16
						Hooper Street	1	2
						Hope St. (St. Martin's)	4	18
						Hope Street (All Saints)		
						Horse Fair	2	12
						Hospital Street		18
						Howard Place		1
						Howard Street	1	7
						Howe Street		1
						Hubert Street		
						Humpage Road	1	12

STREETS.		Zymotic Diseases	Other Diseases	STREETS.		Zymotic Diseases	Other Diseases	STREETS.		Zymotic Diseases	Other Diseases
Hunter's Lane	1			Lees Street	2	1		Meriden Street	1	10	
Hunter's Vale	1			Legge Lane	1	2		Metehley Lane		2	
Hurst Street	6	12		Legge Street	1	15		Metehley Park Road			
Hutton Street				Lench Street	5	11		Miles Street	2	8	
Hyde Road				Lennox Street	5	20		Milk Street	4	12	
Hylton Street	1			Leopold Street	1	17		Miller Street	1	5	
				Lichfield Street	1	12		Mill Lane		6	
				Lilly Green	1	7		Mill Street, Duddleston		2	
				Lingard Street	1	4		Mill Street, Ladywood	4	6	
				Lionel Street	1	5		Milton Road	1	7	
				Lister Street		3		Milton Street		7	
				Little Ann Street	3	4		Milward Street			
				Little Barr Street		3		Minories			
Ieknield Port Road	7	32		Little Bow Street	1			Moat Lane		1	
Ieknield Square	1	12		Little Broom Street	3			Moat Row		2	
Ieknield Street	4	26		Little Cannon Street				Moilliet Street			
Inge Street	1	18		Little Cherry Street		1		Moland Street	1	14	
Ingleby Street	1	19		Little Edward Street	2	7		Mole Street	2	6	
Inkernan Street	4	17		Little Fawdry Street				Mona Road		2	
Irving Street	7	18		Little Francis Street		1		Monmouth Street			
Islington Row	1	8		Little Green Lane	3	14		Montague Road			
Ivy Lane		11		Little Hampton Street		1		Montague Street	1	3	
				Little Hill Street				Montgomery Street		3	
				Little King Street	2	7		Montpellier Street		1	
				Little Shadwell Street				Monument Road	5	34	
				Little Wright Street		1		Moore's Row		2	
				Liverpool Street	1	3		Moorson Street			
				Livery Street	1	18		Moor Street	1	7	
Jamaica Row		3		Lloyd Street				Moreton Street		5	
James Street				Lodge Road	3	15		Morville Street	4	9	
James Turner Street		1		Lombard Street	2	11		Moseley Road	1	15	
Jenkin's Street				London 'Prentice Street	2	6		Moseley Street	4	23	
Jennen's Row		3		Long Aere	9	19		Mott Street	2	12	
Johnson Street	1	2		Longmore Street		2		Mountfield Road			
Johnstone Street	2	7		Long Street	2	7		Mount Pleasant		3	
John Street				Lord Street	1	3		Mount Street, St. Paul's	1	2	
				Louisa Street		2		Mount Street, Deritend			
				Loveday Street	3	12		Mount St., Winson Green	1	10	
				Love Lane		4		Mount Street, Nechells		4	
				Lower Camden Street	6	12		Musgrave Road		5	
				Lower Dartmouth Street		4		Muntz Street	2	9	
				Lower Darwin Street							
				Lower Essex Street	4	13					
				Lower Fazeley Street	1	8					
				Lower Hospital Street		6					
				Lower Hurst Street	1	24					
				Lower Hurst Street East							
				Lr. King Edward's Rd.		2					
				Lower Lawley Street	1	2					
				Lower Lawrence Street							
				Lower Loveday Street							
				Lower Pershore Street	1						
				Lower Priory							
				Lower Russell Street							
				Lowe Street		2					
				Lower Temple Street							
				Lower Tower Street	2	29					
				Lower Trinity Street		4					
				Lower Windsor Street		3					
				Lowe Street							
				Loxton Street		7					
				Ludgate Hill	1	6					
				Ludgate Hill Passage							
				Lupin Street		10					
					</						

STREETS.	Zymotic Diseases	Other Diseases	STREETS.	Zymotic Diseases	Other Diseases	STREETS.	Zymotic Diseases	Other Diseases
Northwood Street ..	4	31				St. Paul's Square ..		2
North Street ..						St. Peter's Place ..		1
Norton Street ..		6				St. Philip's Churchyard ..		
Nova Scotia Street ..		5	R			St. Stephen's Street ..		
Nursery Road ..						St. Vincent's Street ..	5	21
			Radnor Street ..	2	1	Seholefield Street ..	3	25
			Railway Terrace, Ddston ..	2	2	Seotland Passage ..		
O			Railway Terrace, Neehells ..	1	3	Scotland Street ..		2
			Rann Street ..	2	6	Scott Street ..		1
			Ratcliffe Place ..			Severn Street ..		5
			Ratcliffe Street ..			Seymour Street ..		
Oakley Road ..			Ravenhurst Street ..	1	11	Shadwell Street ..		2
Old Cross Street ..	2	6	Rawlins Street ..	3	11	Shakespeare Road ..	1	11
Old Inkleys ..		2	Rea Street ..	1	5	Sheepcote Lane ..		3
Old Meeting Street ..		3	Rea Street South ..			Sheepcote Street ..		14
Old Square ..		1	Regent's Parade ..			Sheep Street ..	3	10
Oliver Road ..		3	Regent Park Road ..	4	5	Sherborne Street ..	2	18
Oliver Street ..		5	Regent Place ..		1	Sherlock Street ..	6	38
Oozells Street ..		1	Regent Row ..		4	Shutt Lane ..		1
Oozells Street North ..	2	2	Regent Street ..		2	Silver Street ..		
Ormond Street ..		11	Reservoir Retreat ..	1	2	Sir Harry's Road ..		1
Osler Street ..	5	14	Reservoir Road ..	1	10	Skinner Lane ..	2	7
Oughton Place ..		6	Richard Street ..	3	14	Skinner Street ..		4
Outlet Road ..			Richard St., All Saints ..			Slaney Street ..		5
Owen Street ..	1	4	Richmond Hill Road ..			Sloe Lane ..		
Oxford Street ..		14	River Street ..			Smallbrook Street ..	4	3
Oxygen Street ..	1	5	River Street, All Saints ..			Smithfield Passage ..		2
			Robert Road ..	3	2	Smithfield Street ..		4
P			Rocky Lane ..	1	10	Smith St., St. George's ..	3	9
			Rodway Street ..	1	2	Smith Street, Duddleston ..		
			Rope Walk ..		2	Snape Street ..		1
			Rotton Park Road ..			Snow Hill ..		10
			Rotton Park Street ..			Soho Road ..		4
Paddington Street ..	3	4	Rowland Street ..		3	Somerset Road ..		2
Pakenham Road ..			Rupert Street ..	3	15	Somerset Street ..		7
Palmer Street ..	7	15	Russell Street ..	2	4	South Road ..	1	5
Parade ..	1	7	Ruston Street ..	2	11	Spark Street ..	2	3
Paradise Street ..		1	Ruston Street North ..	1	18	Speaking Stile Walk ..		
Parker Street ..		11	Ryland Road ..	4	12	Speedwell Road ..		2
Park Lane ..	1	4	Ryland Street, Deritend ..		5	Spencer Street ..		9
Park Road, All Saints' ..	6	31	Ryland St., Ladywood ..		2	Spiced Street ..		2
Park Road, Edgbaston ..			Ryland Street North ..	4	9	Spon Terrace ..		
Park Street ..						Spooner Street ..		1
Parliament Street ..	2	5	S			Springfield Street ..		11
Paternoster Row ..		1				Spring Hill ..	2	12
Paxton Road ..		1				Spring Hill Passage ..	1	1
Pebble Mill Road ..						Spring Road ..		4
Peel Street ..	2	11				Spring Vale ..		2
Penn Street, Deritend ..		6				Stafford Street ..	3	6
Penn Street, Duddleston ..		1				Stanforth Street ..	4	12
Pershore Road ..	1	11				Stanley Road ..		1
Pershore Street ..	2	5	Salop Street ..	1	2	Station Road ..		
Phillip's St., St. Martin's ..			Saltley Road ..	2	15	Steehouse Lane ..		
Phillip's St. St. George's ..	2	6	Saltley Street ..	1	3	Stephenson Place ..		
Pickford Street ..		4	Sampson Road ..		6	Stephenson Street ..		
Piddock Street ..		3	Sampson Road North ..		2	Steward Street ..	2	13
Pigott Street ..		4	Sand Pits ..	1	4	Stewart Street ..		
Pinfold Street ..			Sand Street ..		4	Stirling Road ..		
Pitney Street ..		1	Sandon Road ..		1	Stoke Street ..	4	7
Pitsford Street ..			Sandy Lane ..	3	15	Stone Yard (Deritend) ..		
Plough and Harrow Road ..			Sarah Street ..			Stone Yard (Edgbaston) ..		
Pope Street ..	3	8	St. Augustine's Road ..			Stoney Lane ..		1
Poplar Avenue ..			St. Andrew's Street ..		2	Stour Street ..	5	14
Porchester Street ..		2	St. Andrew's Road ..		8	Stratford Place ..		
Port Hope Road ..		1	St. Clement's Road ..			Stratford Road ..	2	8
Portland Road ..		2	St. George's Crescent ..			Stratford Street ..	1	3
Potter Street ..	1	6	St. George's Street ..	3	17	Suffolk Street ..		14
Poultry ..			St. George's Place ..	2	8	Summerfield Road ..		
Powell Street ..	1	3	St. George's Terrace ..			Summer Hill Road ..		4
Prescott Street ..	12	13	St. James' Place ..	1	2	Summer Hill Street ..		10
Price Street ..	12	7	St. James' Road ..			Summer Hill Terrace ..		2
Priestley Road ..	12	4	St. James' Street ..		3	Summer Lane ..	6	21
Primrose Hill ..			St. Luke's Road ..		15	Summer Road ..	12	8
Princes Row ..		3	St. Luke's Street ..			Summer Row ..	2	
Princes Street ..		3	St. Mark's Street ..		10	Summer St., St. Martin's ..		
Princess Road ..	1	12	St. Mark's Street West ..	1	2	Summer St., St. Phillips ..		
Princip Street ..	1	1	St. Martin's Lane ..			Sun Street ..	4	3
Priory Road ..			St. Martin's Place ..			Sun Street West ..		2
Pritchett's Lane ..			St. Martin's Row ..			Sutton Street ..		
Pritchett Street ..	1	21	St. Martin's Street ..			Swallow Street ..		4
Proctor Street ..	1	5	St. Mary's Row ..		1	Swan Passage ..		
Prospect Row ..		3	St. Mary's Street ..		2	Sydenham Road ..		

STREETS.	Zymotic Diseases	Other Diseases	STREETS.	Zymotic Diseases	Other Diseases	STREETS.	Zymotic Diseases	Other Diseases
T			Vauxhall Road	1	16	Winson Green Road ..	1	
Talbot Street	1	11	Vauxhall Street		3	Winson Street	1	13
Talfourd Street	2	7	Vere Street		5	Wilton Street	1	6
Tanter Street	2	6	Vicarage Road		2	Woodbourne Road ..	1	2
Taylor Street		3	Victoria Grove	1	1	Woodcock Street		16
Temple Field Street ..	2	7	Victoria Street		6	Wood Street, St. Thomas'		1
Temple Row			Villa Street		2	Wood Street, Ladywood		2
Temple Row West			Villiers Street			Worcester Street		1
Temple Street		1	Vine Street		2	Worcester Wharf	1	1
Tenby Street	1	3	Vittoria Street	1		Wordsworth Road		4
Tenby Street North ..		2	Vyse Street		3	Wrentham Street	1	8
Tennant Street	6	22				Wright Street		3
Theodore Street		9	W			Wrottesley Street ..		1
Theresa Road		1	Walter Street		8	Wyndeliffe Road ...	1	2
Thimble Mill Lane ..		9	Ward Street		3	Wynham Road	3	
Thomas St., St. Mary's ..		4	Warner Street		15	Wynn Street	2	17
Thomas Street, Deritend		3	Warstone Lane					
Thorp Street	1	3	Warstone Parade East ..	1		X		
Tillingham Street		5	Warstone Parade West ..			Y		
Tindal Street		9	Warwick House Passage ..		15	Yew Tree Road		2
Tonk Street	1	2	Warwick Street	2	5	York Passage		
Tower Street	3	17	Washington Street		3	York Road		
Trafalgar Road			Waterloo Street	1	9	York Street		
Trent Street		7	Water Street		10			
Trinity Terrace			Waterworks Road		5	Z		
Turner Street	2	4	Watery Lane		29			
Tyndall Street		6	Watts Road					
			Weaman Row					
U			Weaman Street	1	12			
Unett Street	1	35	Wellesley Street		2			
Union Passage		1	Wellington Passage		3			
Union Street			Wellington Road		8	ADDENDA.		
Union Terrace			Wellington Street	1	16	Birmingham and Fazeley		
Upper Dean Street		1	Well Lane		1	Canal		8
Upper Gough Street ..	3	5	Well Street			Birmingham & Warwick		
Upper Highgate Street ..	2	5	Westbourne Road			Canal		1
Upper Hockley Street ..		2	Western Road		1	Birmingham and Worces-		
Upper Hospital Street ..	4	18	Westfield Road		5	ter Canal		1
Upper Marshall Street ..	2	6	Westley Street	3	4	Bordesley R'lway Station		1
Upper Mill Lane			Weston Street		2	Great Western Railway ..		2
Upper Priory		3	Wharf Lane		10	Hockley Station		1
Upper Ryland Road		3	Wharf St., St. Thomas' ..	4	2	New Street Station		1
Upper Tower Street	1	2	Wharf Street, Deritend ..		2	Old Birmingham Canal ..		4
Upper Trinity Street	1	11	Wharf Street, Duddeston ..	1	2	Rotton Park Reservoir ..		1
Upper Windsor Street ..		7	Wharf Street, All Saints' ..	1		River Rea		2
			Wharton Street		14			
V			Wheeler Street	4	1	AT INSTITUTIONS.		
Vale Street		6	Wheley's Lane	1	3	General Hospital	6	215
Varna Road		8	Wheley's Road		6	Queen's Hospital	5	141
Vaughton Street	2	24	White Lion Passage		2	Children's Hospital	29	30
Vaughton Street South ..		1	White Road	1	9	Workhouse	32	636
Vauxhall Grove		1	Whitmore Road		1	Asylum	1	74
			Whitmore Street	1	6	Gaol		8
			Whittall Street		10	Women's Hospital,		
			Wiggin Street		4	Cresecent		
			William Edward Street ..	1	19	Blind Institution		
			William Henry Street	11	5	Borough Hospital	38	8
			William St., St. Thomas' ..		9	Homœopathic Hospital ..		1
			William Street, Deritend ..			Deaf and Dumb		
			William Street North	3	3	Institution		
			Willis Street		19			
			Wilton Street					
			Windmill Hill					
			Windmill Street					
			Windsor Street	1				
						TOTALS	1254	7396

Grand Total ... 8650

MAP OF THE BOROUGH OF BIRMINGHAM, 1880.

NOTE. THE RED SPOTS REPRESENT THE NUMBER OF DEATHS (311) FROM SCARLET FEVER IN 1879.
 RED CROSSES " " " " (164) MEASLES
 BLUE " " " " (64) TYPHOID



1879

TOTAL DEATH RATE FROM ALL CAUSES SHEWN IN WEEKLY PERIODS. THUS

AVERAGE AGE AT DEATH

DEATH RATE PER
1000 PER ANN. &
AV. DEATH AGE IN YRS.

JANUARY				FEBRUARY				MARCH					APRIL				MAY					JUNE				JULY				AUGUST					SEPTEMBER				OCTOBER				NOVEMBER					DECEMBER				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53

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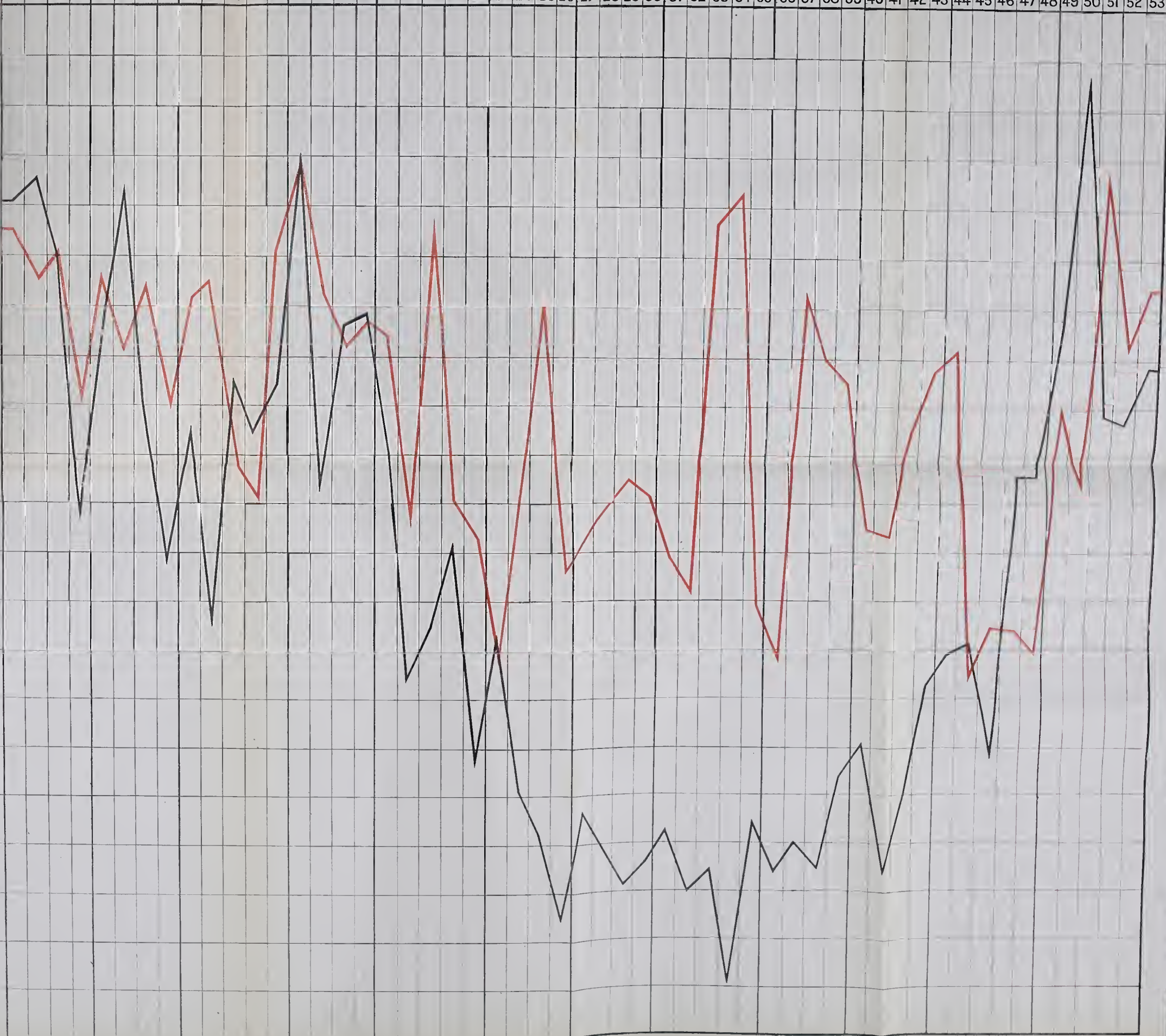
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BOROUGH ANALYST'S LABORATORY,

COUNCIL HOUSE, BIRMINGHAM,

April 30th, 1880.

TO THE HEALTH COMMITTEE.

MR. CHAIRMAN AND GENTLEMEN,

I have to report that during the year 1879, I analysed 168 samples of Food and Drink under the provisions of the "Sale of Food and Drugs Bill." Nearly the whole of the samples were submitted to me by the Inspector of Nuisances. The following statement gives the date of purchase, nature of Article, and result of analysis of each sample :—

No.	DATE—1879.	ARTICLES.	REMARKS.
665—	Jan. 22nd	... Mustard	Genuine.
666—	"	... Pepper	Genuine.
667—	"	... Mustard	Adulterated with 20 % of Wheat Flour and Turmeric.
668—	"	... Pepper.....	Genuine.
669—	"	... Mustard	Adulterated with 15 % of Wheat Flour and Turmeric.
670—	"	... Pepper	Genuine.
671—	"	... Mustard	Genuine.
672—	"	... Pepper	Genuine.
672A—	"	... Mustard	Genuine.
673—	"	... Pepper	Genuine.
674—	"	... Mustard	Genuine.
675—	"	... Pepper	Genuine.
676—	Feb. 6th	... Mustard	Adulterated with 20 % of Flour and Turmeric.
677—	"	... Mustard	Genuine.
678—	"	... Mustard	Genuine.
679—	Feb. 10th	... Milk.....	Adulterated with 15·5 % of Water. Fined 10s. and Costs.
680—	"	... Milk.....	Adulterated with 23 % of Water. Fined 20s. and Costs.
681—	"	... Milk.....	Genuine.
682—	"	... Milk.....	Adulterated with 12·5 % of Water. Fined 10s. and Costs.
683—	Feb. 28th	... Milk.....	Genuine.
684—	March 1st	... Tea	Genuine.
685—	"	... Tea	Genuine.
686—	"	... Tea	Genuine.
687—	"	... Tea	Genuine.
688—	"	... Tea	Genuine.
689—	"	... Tea	Genuine.
690—	March 6th	... Milk.....	Adulterated with 16 % of Water. Fined 5s. and Costs.
691—	"	... Milk.....	Genuine.
692—	"	... Milk.....	Adulterated with 11 % of Water. Fined 2s. 6d. and Costs.
693—	"	... Milk.....	Genuine.
694—	March 10th	... Milk.....	Genuine.
695—	"	... Milk.....	Genuine.
696—	"	... Milk.....	Genuine.
697—	"	... Milk	Genuine.

No.	DATE—1879.	ARTICLES.	REMARKS.
698—	March 13th	Milk.....	Deprived of Cream to the extent of 50%. Fined 5s. and Costs.
699 —	"	Milk.....	Deprived of Cream to the extent of 50%. Fined 2s. 6d. and Costs.
700—	"	Milk.....	Nearly genuine.
701—	"	Milk.....	Genuine.
702—	March 22nd	Milk.....	Genuine.
703—	"	Tea	Genuine.
704—	"	Tea	Genuine.
705—	"	Tea	Genuine.
706—	"	Tea	Genuine.
707—	"	Tea	Genuine.
708—	"	Tea	Genuine.
709—	"	Tea	Genuine.
710—	"	Tea	Genuine.
711—	"	Tea	Genuine.
712—	"	Tea	Genuine.
713—	"	Tea	Genuine.
714—	April 22nd	Ale	Genuine.
715—	"	Ale	Genuine.
716—	"	Ale	Genuine.
717—	"	Ale	Genuine.
718—	"	Ale	Genuine.
719—	"	Ale	Contained 56·5 grains of salt per gallon.
720—	April 30th	Milk.....	Adulterated with 8 % of water.
721—	"	Milk.....	Adulterated with 5 % of water.
722—	"	Milk.....	Adulterated with 21 % of water.
723—	"	Milk.....	Adulterated with 6·5 % of water.
724—	May 6th	Milk.....	Deprived of about two-thirds of its Cream.
725—	"	Milk.....	Adulterated with 6 % of water.
726—	"	Milk.....	Nearly genuine.
727—	"	Milk.....	Nearly genuine.
728—	May 13th	Milk.....	Adulterated with 12 % of water.
729—	"	Milk.....	Adulterated with 8·5 % of water.
730—	"	Milk.....	Adulterated with 4 % of water.
731—	"	Milk.....	Adulterated with 4 % of water.
732—	"	Milk.....	Genuine.
733—	May 22nd	Milk.....	Adulterated with 16·5 % of water.
734—	"	Milk.....	Adulterated with 20·5 % of water.
735—	"	Milk.....	Adulterated with 11·5 % of water.
736—	"	Milk.....	Adulterated with 5 % of water.
737—	June 13th	Milk.....	Adulterated with 4·5 % of water.
738—	June 16th	Coloured Confectionery ..	Genuine.
739—	"	Coloured Confectionery...	Genuine.
740—	"	Coloured Confectionery	Genuine.
741—	"	Coloured Confectionery...	Genuine.
742—	"	Coloured Confectionery...	Genuine.
743—	"	Coloured Confectionery...	Genuine.
744—	June 18th	Coffee	Genuine.
745—	"	Coffee	Genuine.
746—	"	Coffee	Genuine.
747—	"	Coffee	Genuine.
748—	"	Coffee	Genuine.
749—	"	Coffee	Genuine.
750—	June 26th	Milk.....	Adulterated with 7 % of water, and deprived of about one-fourth of its Cream.
751—	"	Milk.....	Deprived of about 14 % of its Cream.
752—	June 30th	Green Tea	Contained a number of small stones, from size of pin's head to small lentil.
753—	"	Green Tea	Genuine.
754—	"	Green Tea	Genuine.
755—	"	Green Tea	Genuine.
756—	"	Green Tea	Genuine.

No.	DATE—1879.	ARTICLES.	REMARKS.
757—	June 30th	.. Green Tea	Genuine.
758—	July 24th	.. Milk.....	Nearly Genuine.
759—	"	.. Milk.....	Nearly Genuine.
760—	"	.. Milk.....	Nearly Genuine.
761—	"	.. Milk.....	Genuine.
762—	July 29th	.. Milk.....	Adulterated with 30 % of water, and deprived of one-quarter of its Cream.
763—	"	.. Milk.....	Nearly Genuine.
764—	"	.. Milk.....	Nearly Genuine.
765—	"	.. Milk.....	Adulterated with 7 % of water, and deprived of one-third of its Cream.
766—	"	.. White Pepper..	Genuine.
767—	"	.. White Pepper.....	Genuine.
768—	"	.. White Pepper.....	Genuine.
769—	"	.. White Pepper.....	Genuine.
770—	"	.. White Pepper.....	Genuine.
771—	"	.. Pepper.....	Genuine.
772—	August 5th	.. Mustard	Genuine.
773—	"	.. Mustard ..	Genuine.
774—	"	.. Mustard	Genuine.
775—	"	.. Mustard	Genuine.
776—	"	.. Mustard	Adulterated with 15 % of wheat flour.
777—	"	.. Mustard	Genuine.
778—	August 22nd...	.. Milk.....	Adulterated with 9 % of water.
779—	"	.. Milk.....	Genuine.
780—	"	.. Milk.....	Adulterated with 6 % of water.
781—	"	.. Milk.....	Adulterated with 23 % of water, and deprived of one-third of its Cream.
782—	August 25th...	.. Salt Butter	Genuine.
783—	"	.. Fresh Butter	Genuine.
784—	Sept. 16th	.. Brown Sugar	Very coarse, but genuine.
785—	"	.. Brown Sugar	Genuine.
786—	"	.. Brown Sugar	Genuine.
787—	"	.. Brown Sugar	Genuine.
788—	Sept. 22nd	.. Fresh Butter	Genuine.
789—	"	.. Fresh Butter	Genuine.
790—	"	.. Fresh Butter	Genuine.
791—	"	.. Fresh Butter	Genuine.
792—	"	.. Butterine.....	Genuine.
792A—	"	.. Beef Dripping.....	Genuine.
793—	"	.. Lard	Genuine.
794—	"	.. Mutton Fat.....	Genuine.
795—	Sept. 25th	.. Milk.....	Adulterated with 5.5 % of water, and deprived of two-thirds of its Cream.
796—	"	.. Milk.....	Genuine.
797—	"	.. Milk.....	Adulterated with 5 % of water.
798—	"	.. Milk.....	Adulterated with 3.5 % of water.
799—	Dec. 5th	.. Tea	Genuine.
800—	"	.. Coffee	Genuine.
801—	"	.. Tea	Genuine.
802—	"	.. Coffee	Genuine.
803—	"	.. Tea	Genuine.
804—	"	.. Coffee	Genuine.
805—	"	.. Tea	Genuine.
806—	"	.. Coffee ..	Genuine.
807—	"	.. Tea	Genuine.
808—	"	.. Coffee	Genuine.
809—	"	.. Tea	Genuine.
810—	"	.. Coffee	Genuine.
811—	Dec. 16th	.. Flour	Genuine.
812—	"	.. Flour	Genuine.
813—	"	.. Flour	Genuine.
814—	"	.. Flour	Genuine.
815—	"	.. Flour	Genuine.
816—	"	.. Flour	Genuine.
817—	Dec. 19th	.. Pepper.....	Genuine.

No.	DATE—1879.	ARTICLES.	REMARKS.
818—	Dec. 19th	... Pepper.....	Genuine.
819—	"	... Pepper	Genuine.
820—	"	... Pepper	Genuine.
821—	"	... Pepper	Genuine.
822—	"	... Pepper	Genuine.
823—	Dec. 23rd	... Milk.....	Adulterated with 7 % of water, and deprived of one-third of its Cream.
824—	"	... Milk.....	Adulterated with 11 % of water.
825—	"	... Milk	Adulterated with 10 % of water.
826—	"	... Milk.....	Genuine.
827—	Dec. 30th	.. Milk.....	Adulterated with 14 % of water.
828—	"	... Milk.....	Nearly Genuine.
829—	"	... Milk.....	Nearly Genuine.
830—	"	... Milk.....	Adulterated with 10 % of water.

The 168 samples analysed consisted of—

62	samples of	Milk
29	"	Tea
18	"	Pepper
15	"	Mustard
12	"	Coffee
6	"	Ale
6	"	Butter
6	"	Confectionery
6	"	Flour
4	"	Sugar
1	"	Butterine
1	"	Beef Dripping
1	"	Lard
1	"	Mutton Fat

Total, 168 samples.

Of the 62 samples of Milk analysed, 37, or very nearly 60 per cent., contained either added water or had been deprived of their cream; the remaining samples of Milk were genuine, or nearly so. The Teas, with the exception of one which contained a number of small stones, were all genuine, as were also the Peppers and Coffees.

Four of the samples of Mustard were adulterated with from 15 to 20 per cent. of wheat flour and turmeric, while one of the Ales contained a greater quantity of salt than is allowed by the Excise. The samples of Sugar were genuine, though one was of very inferior quality.

The samples of Confectionery, Flour, Butter, Butterine, Beef Dripping, Lard, and Mutton Fat were unadulterated.

I remain,

Mr. Chairman and Gentlemen,

Your obedient Servant,

ALFRED HILL, M.D., F.I.C.,
Borough Analyst.